



# **OPERATOR'S MANUAL**

**SETTING UP INSTRUCTIONS**

**OPERATION  
MAINTENANCE  
LUBRICATION**

**McCormick<sup>®</sup>  
INTERNATIONAL<sup>®</sup>**

**184**

**Planter Unit**

## To The Owner

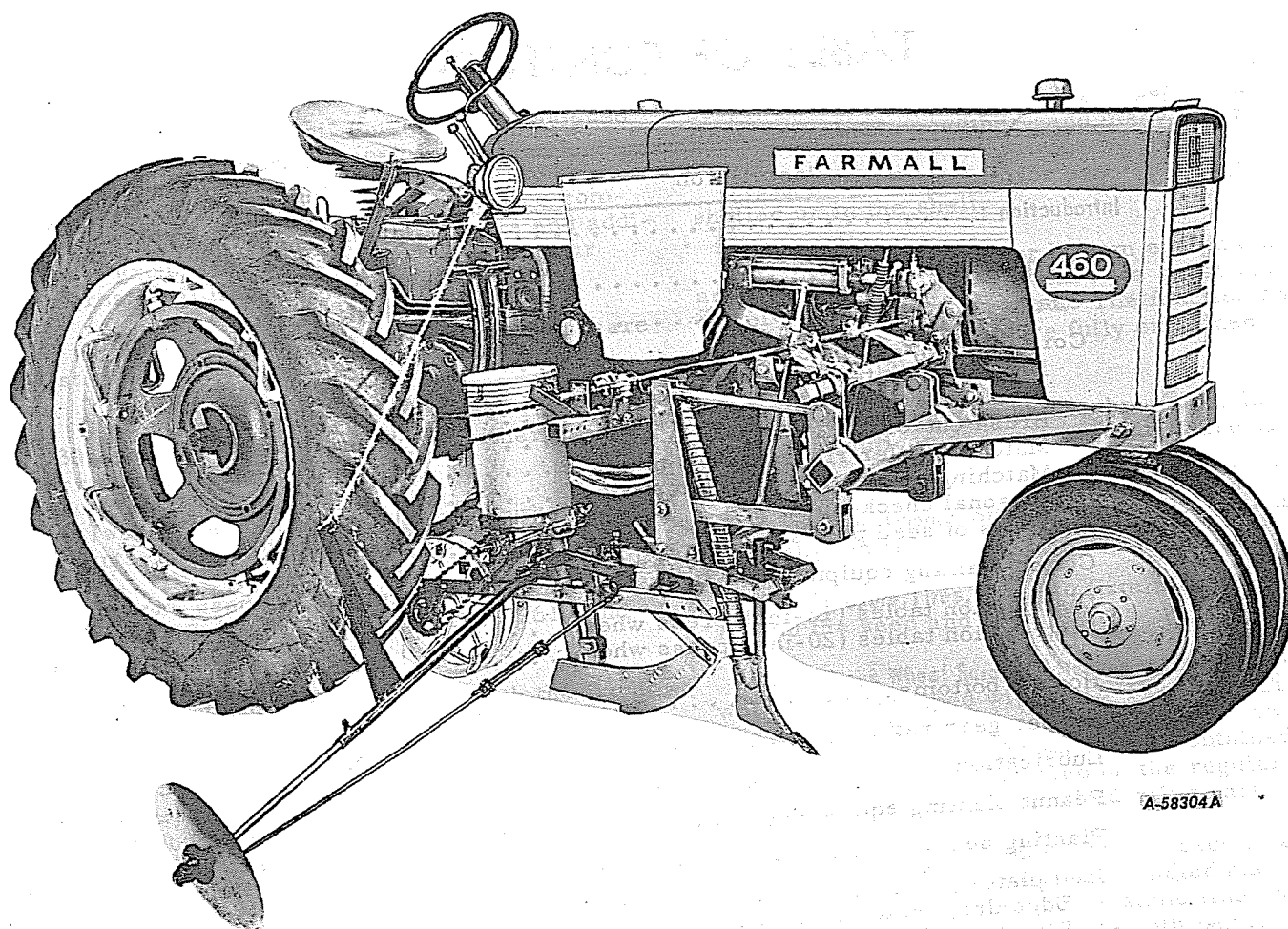
Your new International Harvester planter is designed to meet today's exacting operating requirements. The ease of operation, and ability to adjust to field conditions lighten your work and shorten your hours on the job.

You are urged to consult your International Harvester dealer concerning unusual conditions or special applications. Let the experience of your dealer and the organization associated with him serve you.

Be sure to read the instructions for Adjusting and Operating in this manual. Check each item referred to and acquaint yourself with the adjustments required to obtain efficient operation and maximum trouble-free service. Remember, a planter which is properly lubricated and adjusted saves time, labor, and fuel.

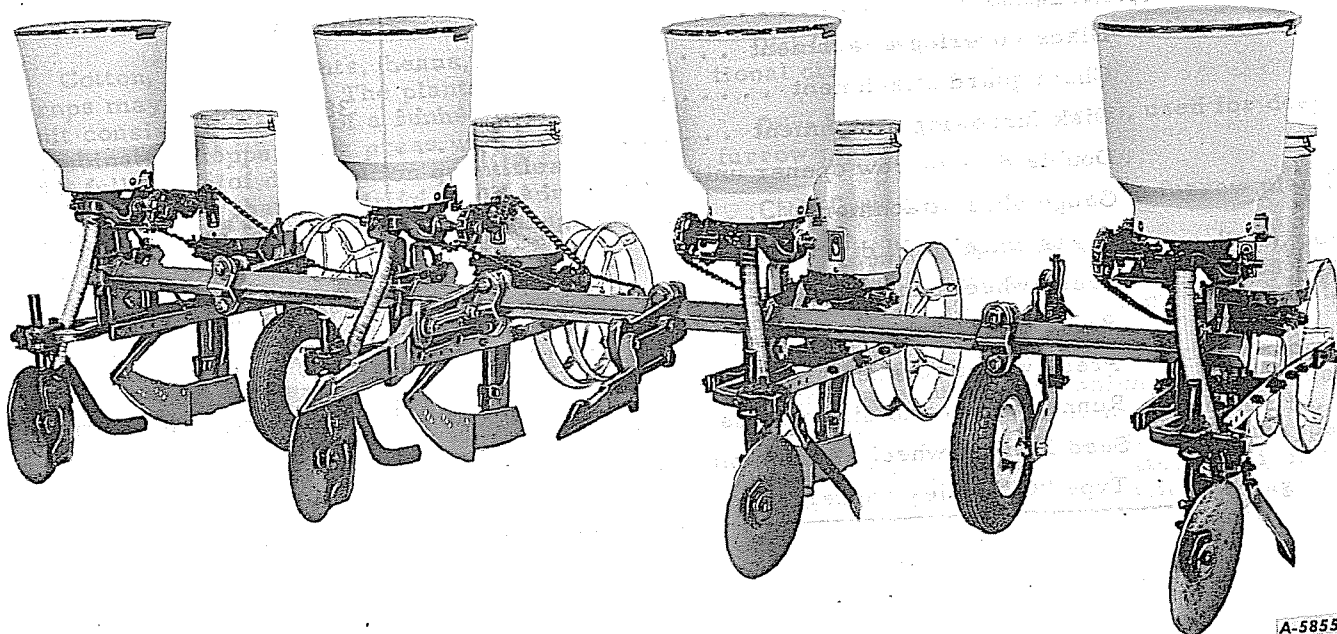
After the operating season, thoroughly clean your planter and inspect it. Preventive maintenance pays dividends. Your dealer has original-equipment parts which assure proper fit and best performance. He is able to recondition your equipment to a like new condition.

Additional copies of this manual may be ordered from your International Harvester dealer at a nominal price.



A-58304A

Two 184 Planter Units attached to 34-261 Cultivator Frame with 217 Fertilizer Unit and Marker Attachment illustrated.



A-58558A

Four 184 Planter Units attached to the 24 Tool Bar Carrier with the 118 Fertilizer Unit with Disk Applicators illustrated.

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# INTRODUCTION

The 184 Planter Unit (one-row) is designed to provide a basic, self-contained planter for a variety of applications. One unit may be used alone or two or more units may be combined. The necessary attaching parts and additional ground tools are available from your International Harvester dealer.

Various applications of this planter unit are listed as follows:

**One-row**, on Farmall® Cub®, Super A, 100, 130, and 140 Tractors equipped either with or without Fast-Hitch.

**Two-row**, used in combination with the rear-mounted 200, 259, 263, or 263A Cultivators.

**Two-row**, used in combination with the front-mounted 2C-254A, K-254, 34-255, 261, and 268 Cultivators.

**Four-row**, used in combination with the front-mounted 34-455A, 461, 465, and 468 Cultivators, and the rear-mounted 463 Cultivator.

**Two or four-row**, used in combination with the rear mounted 21, 43, 44, or 221 Tool Bars and 23, 24, 25A, and 26 Tool Bar Carriers. The units may be clamped to any tool bar 1-3/4", 2", or 2-1/4" square, having the diagonals set vertical and horizontal or to a tool bar 3-1/4" square, having the sides set vertical and horizontal.

Additional information will be found in the Operator's Manual furnished with the adapting parts.

Cotton, corn, peanuts, beans, and similar crops may be planted. The planter is a simple unit consisting mainly of a runner opener and combination hopper with press wheel drive. The full range of distribution quantities is accomplished by changing drive chain sprockets on the axle and feed shafts and by changing the ratio of the gears under the hopper.

The combination hopper is furnished regularly with this planter. Three styles of hopper bottom equipments are available as follows:

**Cotton Bottom Equipment**, for gin-run or reginned cotton seed.

**Corn Bottom Equipment**, for acid delinted cotton seed, field corn, sweet corn, popcorn, kaffir

corn, broom corn, beets, beans, peas, sunflower, melon, cucumber, and many others.

**Peanut Bottom Equipment**, for peanuts either shelled or in the shell.

By selecting the proper bottom equipment and the seed plates to go with it, a great variety of seeds may be handled. The function and purposes of this hopper are fully explained elsewhere in this manual.

**Special Equipment** and attachment for local farming practices and soil conditions are as follows:

**Double Disk Opener**, often preferred for planting in trashy conditions.

**Zero-Pressure Tires**, used to firm the soil around the seed and shed dirt.

**Drive Press Wheel Scraper Attachment**, for use on wheels not equipped with Zero-Pressure Tires.

The Type "C" Duplex Hopper may be obtained when desired. It is mounted on the regular hopper bracket by means of adapting parts.

This hopper is divided into two sections so that two kinds of seed may be handled and dropped separately, or at the same time, as desired. It is a great favorite with peanut growers because of its ability to handle peanuts either shelled or in the shell.

**Runner Wings and Dirt Shields**, to sweep off the tops of beds.

**Disk Covering Attachment**, used to throw additional dirt over the seed.

**Drive Press Wheel (20" diameter)**, used for deep furrow planting.

**Chain Guard Attachment**, for deep furrow planting.

**Disk Furrowing Attachment (9" diameter disks)**, permits uniform planting in rough seed beds and places the seed deeper into firm, moist soil.

Illustrations are numbered to correspond with the page number on which they are located. Therefore, if reference is made to Illust. 5A, for example, you know that the illustration appears on page 5. The letter "A" indicates that it is the second illustration on that particular page.



# ADJUSTING AND OPERATING

## LUBRICATION

Use a pressure lubrication gun and keep all bearings and working parts well lubricated.

Lubrication fittings are provided in the following places:

Two straight fittings . . . in axle bearings.

Two straight fittings . . . in feed shaft bearings.

One straight fitting . . . in hopper ring gear.

## Seed Mechanism

Use kerosene or paraffin oil to cut the paint on the seed mechanism so that the parts will work freely.

Use nothing but kerosene or paraffin oil on the seed mechanism.

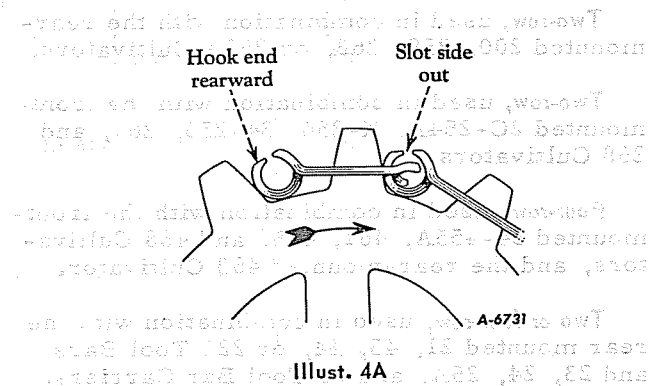
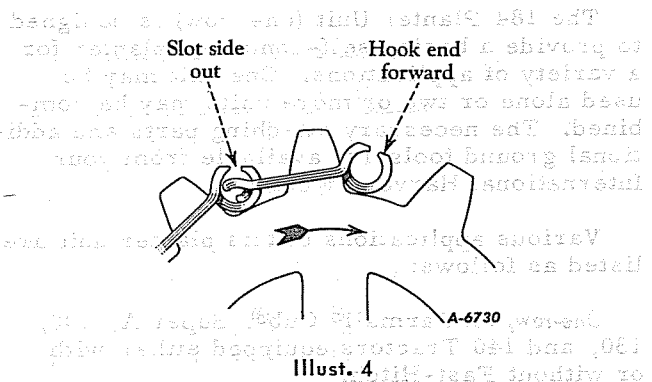
**NOTE:** Before operating the planter be sure that all bolts and set screws are perfectly tight and that all cotters are spread to keep them from falling out.

## CHAINS

Place the chains on the sprockets as shown in Illusts. 4 and 4A according to the size of the drive sprocket in relation to the size of the sprocket to be driven.

When the drive sprocket is larger than the driven sprocket, the chain should be placed on the sprockets as shown in Illust. 4.

When the drive sprocket is smaller than the driven sprocket, the chain should be placed on the sprockets as shown in Illust. 4A.



To detach the chain, bend to the coupling position and strike light blows.

## PLANTING DEPTH

The depth at which the seed is planted is gauged by the press wheel. Turn the adjusting screw "K" (Illust. 35) to place the seed at the desired depth.

Turn the adjusting screws evenly, so the load is carried equally on both screws.

**Planters Equipped with Runner Wings:** The depth at which the seed is planted is determined by the adjustment provided on the runner wings. While planting make certain the drive wheel remains firmly on the ground to drive the hopper. Turn the nut "L" (Illust. 35) on the adjusting screw until it is approximately 1" below the frame bracket. This will give the drive wheel limited vertical freedom to follow the contour of the ground.

# ADJUSTING AND OPERATING

## DISTRIBUTION TABLE

### Drilling Distances - 16-inch Press Wheel

Drive Chain Sprockets Shaft Pinion and Ring Gear Ratio			Cells in Seed Plate (Inches Apart in Row)						
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	16 Cells	22 Cells	24 Cells	29 Cells	34 Cells	38 Cells	40 Cells
13	7	10-20	4.0	2.9	2.7	2.2	1.9	1.7	1.6
13	8	10-20	4.6	3.4	3.1	2.6	2.2	1.9	1.8
10	7	10-20	5.2	3.8	3.5	2.9	2.5	2.2	2.1
13	10	10-20	5.8	4.2	3.8	3.2	2.7	2.4	2.3
10	8	10-20	6.0	4.4	4.0	3.3	2.9	2.5	2.4
8	7	10-20	6.5	4.7	4.3	3.6	3.1	2.7	2.6
13	7	12-40	6.7	4.5	4.5	3.7	3.2	2.8	2.7
*	*	10-20	7.5	5.4	5.0	4.1	3.5	3.2	3.0
13	8	12-40	7.7	5.6	5.1	4.3	3.6	3.2	3.1
7	8	10-20	8.6	6.2	5.7	4.7	4.0	3.6	3.4
10	7	12-40	8.7	6.4	5.8	4.8	4.1	3.7	3.5
8	10	10-20	9.4	6.8	6.2	5.2	4.4	3.9	3.7
13	10	12-40	9.6	7.0	6.4	5.3	4.5	4.0	3.8
10	13	10-20	9.7	7.1	6.5	5.4	4.6	4.1	3.9
10	8	12-40	10.0	7.3	6.7	5.5	4.7	4.2	4.0
7	10	10-20	10.7	7.7	7.1	5.9	5.0	4.5	4.3
8	7	12-40	10.8	8.0	7.3	6.0	5.1	4.6	4.4
8	13	10-20	12.2	8.8	8.1	6.7	5.7	5.1	4.9
*	*	12-40	12.5	9.1	8.3	6.9	5.9	5.3	5.0
7	13	10-20	13.9	10.1	9.3	7.7	6.5	5.9	5.6
7	8	12-40	14.4	10.4	9.6	7.9	6.7	6.0	5.7
8	10	12-40	15.6	11.3	10.4	8.6	7.3	6.6	6.2
10	13	12-40	16.3	11.8	10.9	9.0	7.7	6.9	6.5
7	10	12-40	17.8	12.9	11.9	9.8	8.4	7.5	7.1
8	13	12-40	20.3	14.7	13.5	11.2	9.6	8.6	8.1
7	13	12-40	23.1	16.8	15.4	12.7	10.8	9.7	9.2

\* 1 to 1 ratio obtained by selecting identical sprockets from two units.

For 8-cell seed plates, the drilling distance will be twice the distance shown for 16-cell plates.

For 12-cell seed plates, the drilling distance will be twice the distance shown for 24-cell plates.

For 20-cell seed plates, the drilling distance will be twice the distance shown for 40-cell plates.

For 32-cell seed plates, the drilling distance will be one-half the distance shown for 16-cell plates.

For 82-cell seed plates, the drilling distance can be considered one-half the distance shown for 40-cell plates.

# ADJUSTING AND OPERATING

## DISTRIBUTION TABLE - Continued

Approximate Pounds of Cotton per Acre - 40-inch Rows  
(Cotton Planting Unit) (16-inch Press Wheel)

Drive Chain Sprockets			Seed Plates						
Shaft Pinion and Ring Gear Ratio			621 719 R3		621 717 R3		622 424 R1		622 480 R1
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	Reginned Seed	Gin Run Seed	Reginned Seed	Gin Run Seed	Reginned Seed	Gin Run Seed	Acid Delinted Seed
13	7	10-20	71.4	30.3	90.0	60.5	123.5	94.1	32.7
13	8	10-20	62.5	26.5	78.8	53.0	108.0	82.5	27.7
10	7	10-20	55.0	23.4	69.4	46.7	95.2	72.6	25.2
13	10	10-20	50.1	21.3	63.3	42.5	86.8	66.1	23.0
10	8	10-20	48.1	20.4	60.7	40.7	83.4	63.5	22.1
8	7	10-20	44.0	18.7	55.5	37.2	76.0	58.0	20.2
13	7	12-40	42.8	18.1	53.0	36.2	74.0	56.5	19.6
*	*	10-20	38.5	16.4	48.5	32.8	66.6	50.1	17.7
13	8	12-40	37.6	15.9	47.3	31.9	65.0	49.5	17.2
7	8	10-20	33.8	14.3	42.5	28.5	58.4	44.5	15.5
10	7	12-40	33.0	14.0	41.6	27.9	57.1	43.5	15.1
8	10	10-20	30.8	13.0	38.8	26.0	53.3	40.6	14.1
13	10	12-40	30.0	12.7	37.8	25.4	52.0	39.6	13.8
10	13	10-20	29.6	12.5	37.4	25.0	51.3	39.1	13.6
10	8	12-40	28.9	12.2	36.5	24.4	50.0	37.9	13.2
7	10	10-20	27.0	11.5	34.1	22.8	46.7	35.7	12.4
8	7	12-40	26.4	11.2	33.3	22.3	45.7	34.8	12.1
8	13	10-20	23.7	10.0	29.8	20.0	41.0	31.3	10.9
*	*	12-40	23.0	---	29.2	19.6	40.0	30.5	10.6
7	13	10-20	20.8	---	26.3	17.6	36.0	27.5	9.5
7	8	12-40	20.3	---	25.6	17.1	35.1	26.7	9.3
8	10	12-40	18.5	---	23.3	15.6	32.0	24.4	8.5
10	13	12-40	17.8	---	22.4	15.0	30.7	23.4	8.1
7	10	12-40	16.2	---	20.4	13.7	28.0	21.4	7.4
8	13	12-40	14.2	---	17.9	12.0	24.6	18.7	6.5
7	13	12-40	12.5	---	15.7	10.5	21.6	16.5	5.7

\* 1 to 1 Ratio obtained by selecting identical sprockets from two units.

Approximate Pounds of Acid Delinted Cotton per Acre - 40-inch Rows  
(Corn Planting Unit) (16-inch Press Wheel)

Drive Chain Sprockets			Seed Plates					
Shaft Pinion and Ring Gear Ratio			476 678 R1	476 675 R1				
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	or 1 978 AB	or 1 975 AB	622 240 R2	1 929 A	3 313 A	3 314 A
13	7	10-20	34.0	25.6	24.2	22.8	18.1	14.2
13	8	10-20	29.7	22.4	21.2	20.0	15.8	12.4
10	7	10-20	26.2	19.8	18.6	17.6	13.9	11.0
13	10	10-20	23.9	18.0	17.1	16.1	12.7	10.0
10	8	10-20	22.9	17.3	16.3	15.4	12.2	9.6
8	7	10-20	21.0	15.8	14.9	14.1	11.1	8.7
13	7	12-40	20.4	15.4	14.5	13.7	10.8	8.5
*	*	10-20	18.3	13.8	13.1	12.3	9.5	7.7
13	8	12-40	17.9	13.5	12.7	12.0	9.5	7.5
7	8	10-20	16.2	12.1	11.4	10.8	8.5	6.7
10	7	12-40	15.7	11.8	11.2	10.5	8.4	6.6
8	10	10-20	14.7	11.1	10.4	9.9	7.8	6.1
13	10	12-40	14.3	10.8	10.2	9.6	7.6	6.0
10	13	10-20	14.1	16.6	10.0	9.5	7.5	5.9
10	8	12-40	13.7	10.4	9.8	9.2	7.3	5.7
7	10	10-20	12.9	9.7	9.1	8.6	6.9	5.4
8	7	12-40	12.6	9.5	8.9	8.4	6.7	5.3
8	13	10-20	11.3	8.5	8.0	7.6	6.0	4.7
*	*	12-40	11.0	8.3	7.4	7.4	5.9	---
7	13	10-20	9.9	7.5	7.0	6.7	5.3	---
7	8	12-40	9.7	7.3	6.9	6.5	5.1	---
8	10	12-40	8.8	6.6	6.3	5.9	4.7	---
10	13	12-40	8.5	6.4	6.0	5.7	---	---
7	10	12-40	7.7	5.8	5.5	5.2	---	---
8	13	12-40	6.8	5.1	4.8	4.5	---	---
7	13	12-40	6.0	4.5	---	---	---	---

\*. 1 to 1 Ratio obtained by selecting identical sprockets from two units.



# ADJUSTING AND OPERATING

## DISTRIBUTION TABLE - Continued

Approximate Pounds of Soybeans per Acre - 40-inch Rows  
(Corn Planting Unit) (16-inch Press Wheel)

Drive Chain Sprockets Shaft Pinion and Ring Gear Ratio			Seed Plates					
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	3 127 A	3 301 A	3 114 A	3 231 A	1 926 A	3 302 A
13	7	10-20	--	--	112.0	97.5	83.8	67.5
13	8	10-20	--	129.0	98.5	85.3	73.4	59.1
10	7	10-20	--	114.0	86.8	75.3	64.7	52.1
13	10	10-20	--	103.5	79.0	68.5	58.9	47.5
10	8	10-20	--	99.3	75.6	65.5	56.5	45.5
8	7	10-20	--	90.8	69.2	60.0	51.6	41.5
13	7	12-40	122.0	88.4	67.4	58.4	50.2	40.5
*	*	10-20	109.0	79.5	60.6	52.6	45.3	36.5
13	8	12-40	107.0	77.4	59.0	51.2	44.0	35.4
7	8	10-20	96.0	69.5	53.0	45.8	39.5	31.8
10	7	12-40	94.5	68.2	52.0	45.2	38.8	31.2
8	10	10-20	87.6	63.5	48.3	41.8	36.0	29.0
13	10	12-40	86.0	62.1	47.4	41.0	35.3	28.4
10	13	10-20	84.4	60.9	46.4	40.2	34.6	27.9
10	8	12-40	82.6	59.6	45.5	39.4	33.9	27.4
7	10	10-20	76.6	56.0	42.2	36.6	31.5	25.4
8	7	12-40	76.0	54.8	41.8	36.2	31.1	25.1
8	13	10-20	67.5	48.7	37.1	32.1	27.6	22.3
*	*	12-40	66.1	47.7	36.4	31.6	27.2	21.8
7	13	10-20	59.0	42.6	32.5	28.1	24.2	19.5
7	8	12-40	58.1	42.0	32.0	27.7	23.8	--
8	10	12-40	53.1	39.0	29.2	25.3	21.8	--
10	13	12-40	50.6	36.5	27.9	24.1	20.7	--
7	10	12-40	46.5	33.5	25.5	22.1	19.0	--
8	13	12-40	40.5	29.2	22.3	19.3	--	--
7	13	12-40	35.4	25.6	19.5	--	--	--

\* 1 to 1 Ratio obtained by obtaining identical sprockets from two units.

Approximate Pounds of Small Seeds or Maize per Acre - 40-inch Rows  
(Corn Planting Unit) (16-inch Press Wheel)

Drive Chain Sprockets Shaft Pinion and Ring Gear Ratio			Seed Plates						1 901 A	1 967 A
			3 559 A							
			Large Varieties of Seed			Small Varieties of Seed				
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	Size of Cells			Size of Cells				
			3/16"	7/32" †	1/4" †	3/16"	7/32" †	1/4" †		
13	7	10-20	5.2	10.5	--	6.9	10.5	--	--	7.2
13	8	10-20	4.6	9.2	--	6.1	9.2	--	10.5	6.3
10	7	10-20	4.0	8.1	--	5.4	8.1	--	9.3	5.6
13	10	10-20	3.7	7.3	--	4.9	7.3	--	8.5	5.1
10	8	10-20	3.5	7.0	--	4.7	7.0	--	8.1	4.9
8	7	10-20	3.2	6.4	10.2	4.3	6.4	--	7.4	4.4
13	7	12-40	3.1	6.3	10.0	4.2	6.3	--	7.2	4.3
*	*	10-20	2.9	5.9	9.0	3.8	5.9	--	6.5	3.9
13	8	12-40	2.7	5.5	8.7	3.7	5.5	--	6.3	3.8
7	8	10-20	2.5	4.9	7.8	3.3	4.9	--	5.7	3.4
10	7	12-40	2.4	4.8	7.7	3.2	4.8	--	5.6	3.3
8	12	10-20	2.2	4.5	7.1	3.0	4.5	--	5.2	3.1
13	10	12-40	2.2	4.4	7.0	2.9	4.4	--	5.1	3.0
10	13	10-20	2.2	4.3	6.9	2.9	4.3	10.8	5.0	3.0
10	8	12-40	2.1	4.2	6.7	2.8	4.2	10.6	4.9	2.9
7	10	10-20	2.0	3.9	6.2	2.6	3.9	9.8	4.6	2.7
8	7	12-40	1.9	3.9	6.2	2.6	3.9	9.7	4.5	2.7
8	13	10-20	1.7	3.5	5.5	2.3	3.5	8.6	4.0	2.4
*	*	12-40	1.7	3.4	5.4	2.3	3.4	8.4	3.9	2.3
7	13	10-20	1.5	3.0	4.8	2.0	3.0	7.5	3.5	2.1
7	8	12-40	1.5	3.0	4.7	2.0	3.0	7.4	3.4	2.1
8	10	12-40	1.4	2.7	4.3	1.8	2.7	6.8	3.1	1.9
10	13	12-40	1.3	2.6	4.1	1.7	2.6	6.5	3.0	1.8
7	10	12-40	1.2	2.4	3.8	1.6	2.4	5.9	2.7	1.6
8	13	12-40	1.0	2.1	3.3	1.4	2.1	5.2	2.4	1.4
7	13	12-40	.9	1.8	2.9	1.2	1.8	4.5	2.1	1.3

\* 1 to 1 Ratio obtained by obtaining identical sprockets from two units.

† Reamed.

# ADJUSTING AND OPERATING

## DISTRIBUTION TABLES - Continued

### Drilling Distances - 20-inch Press Wheel

Drive Chain Sprocket Shaft Pinion and Ring Gear Ratio			Cells in Seed Plate (Inches apart in Row)						
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	16 Cells	22 Cells	24 Cells	29 Cells	34 Cells	38 Cells	40 Cells
14	7	10-20	4.5	3.3	3.0	2.5	2.1	1.9	1.8
12	7	10-20	5.2	3.8	3.5	2.9	2.5	2.2	2.1
14	9	10-20	5.8	4.2	3.8	3.2	2.7	2.4	2.3
12	9	10-20	6.7	4.9	4.5	3.7	3.2	2.8	2.7
9	7	10-20	7.0	5.1	4.7	3.9	3.3	2.9	2.8
14	7	12-40	7.5	5.4	5.0	4.1	3.5	3.1	3.0
14	12	10-20	7.7	5.6	5.1	4.2	3.6	3.2	3.1
12	7	12-40	8.7	6.4	5.8	4.8	4.1	3.7	3.5
*	*	10-20	9.0	6.5	6.0	5.0	4.2	3.8	3.6
14	9	12-40	9.6	7.0	6.4	5.3	4.5	4.0	3.8
12	14	10-20	10.5	7.6	7.0	5.8	4.9	4.4	4.2
12	9	12-40	11.2	8.2	7.5	6.2	5.3	4.7	4.5
7	9	10-20	11.6	8.4	7.7	6.3	5.4	4.8	4.6
9	7	12-40	11.7	8.5	7.8	6.4	5.5	4.9	4.7
9	12	10-20	12.0	8.7	8.0	6.6	5.6	5.0	4.8
14	12	12-40	12.6	9.2	8.4	7.0	5.9	5.3	5.0
9	14	10-20	14.0	10.2	9.3	7.7	6.6	5.9	5.6
*	*	12-40	15.0	10.9	10.0	8.3	7.0	6.3	6.0
7	12	10-20	15.4	11.2	10.3	8.5	7.3	6.5	6.2
12	14	12-40	17.5	12.7	11.7	9.7	8.2	7.4	7.0
7	14	10-20	18.0	13.1	12.0	9.9	8.5	7.6	7.2
7	9	12-40	19.2	14.0	12.8	10.6	9.0	8.1	7.7
9	12	12-40	20.0	14.5	13.3	11.0	9.4	8.4	8.0
9	14	12-40	23.3	17.0	15.5	12.9	11.0	9.6	9.3
7	12	12-40	25.2	18.7	17.1	14.2	12.1	10.8	10.3
7	14	12-40	30.0	21.8	20.0	16.5	14.1	12.6	12.0

\* 1 to 1 ratio obtained by selecting identical sprockets from two units.

For 8-cell seed plates, the drilling distance will be twice the distance shown for 16-cell plates.

For 12-cell seed plates, the drilling distance will be twice the distance shown for 24-cell plates.

For 20-cell seed plates, the drilling distance will be twice the distance shown for 40-cell plates.

For 32-cell seed plates, the drilling distance will be one-half the distance shown for 16-cell plates.

For 82-cell seed plates, the drilling distance can be considered one-half the distance shown for 40-cell plates.

# ADJUSTING AND OPERATING

## DISTRIBUTION TABLES - Continued

Approximate Pounds of Cotton Per Acre - 40-inch Rows  
(Cotton Planting Unit) (20-inch Press Wheel)

Drive Chain Sprockets			Seed Plates						
Shaft Pinion and Ring Gear Ratio			621 719 R3		621 717 R3		622 424 R1		622 480 R1
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	Reginned Seed	Gin-Run Seed	Reginned Seed	Gin-Run Seed	Reginned Seed	Gin-Run Seed	Acid De-linted Seed
14	7	10-20	64.2	27.2	81.0	54.5	111.0	84.8	29.5
12	7	10-20	54.8	23.3	69.5	46.7	95.0	72.5	25.2
14	9	10-20	50.0	21.2	63.0	42.4	86.3	66.0	22.9
12	9	10-20	42.8	18.1	54.0	36.3	74.0	56.5	19.6
9	7	10-20	41.2	17.5	52.0	35.0	71.2	54.5	18.8
14	7	12-40	38.5	16.3	48.5	32.7	66.6	50.8	17.6
14	12	10-20	37.4	15.9	47.2	31.8	64.8	49.5	17.2
12	7	12-40	33.0	14.0	41.6	28.0	57.0	43.5	15.1
*	*	10-20	32.1	13.6	40.5	26.3	55.5	42.3	14.7
14	9	12-40	30.0	12.7	37.9	25.5	52.0	39.6	13.8
12	14	10-20	27.5	11.7	34.7	23.4	47.6	36.4	12.6
12	9	12-40	25.7	10.9	32.4	21.8	44.4	33.9	11.8
7	9	10-20	25.0	10.5	31.5	21.2	43.1	32.9	11.4
9	7	12-40	24.7	10.4	31.2	21.0	42.8	32.6	11.3
9	12	10-20	24.1	10.2	30.5	20.4	41.6	31.8	11.0
14	12	12-40	23.9	9.7	28.8	19.4	39.2	29.9	10.4
9	14	10-20	20.6	--	26.0	17.5	35.7	27.2	9.5
*	*	12-40	19.3	--	24.2	16.4	33.5	25.4	8.8
7	12	10-20	18.8	--	23.6	15.9	32.3	24.6	8.6
12	14	12-40	16.5	--	20.8	14.0	28.6	21.8	7.6
7	14	10-20	16.0	--	20.2	13.6	27.7	21.2	7.4
7	9	12-40	15.0	---	18.9	12.7	25.9	19.8	6.9
9	12	12-40	14.4	--	18.2	12.2	25.0	19.0	6.6
9	14	12-40	12.4	--	15.6	10.5	21.4	16.3	5.8
7	12	12-40	11.2	--	14.2	9.5	19.4	14.8	5.2
7	14	12-40	9.6	--	12.1	--	16.7	12.7	4.4

\* 1 to 1 Ratio obtained by selecting identical sprockets from two units.

Approximate Pounds of Acid Delinted Cotton per Acre - 40-inch Rows  
(Corn Planting Unit) (20-inch Press Wheel)

Drive Chain Sprockets			Seed Plates						
Shaft Pinion and Ring Gear Ratio									
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	1 978 AB or 476 678 R1	1 975 AB or 476 675 R1	622 240 R2	1 929 A	3 313 A	3 314 A	
14	7	10-20	30.6	23.0	21.7	20.5	16.3	12.8	
12	7	10-20	26.2	19.8	18.6	17.6	14.0	11.0	
14	9	10-20	23.7	17.9	16.8	15.9	12.6	9.9	
12	9	10-20	20.4	15.3	14.4	13.7	10.8	8.5	
9	7	10-20	19.6	14.8	13.9	13.1	10.4	8.2	
14	7	12-40	18.3	13.8	13.0	12.3	9.7	7.7	
14	12	10-20	17.8	13.5	12.6	12.0	9.4	7.5	
12	7	12-40	15.7	11.8	11.1	10.5	8.4	6.6	
*	*	10-20	15.3	11.5	10.9	10.2	8.1	6.4	
14	9	12-40	14.3	10.8	10.1	9.6	7.6	6.0	
12	14	10-20	13.1	10.0	9.3	8.8	7.0	5.5	
12	9	12-40	12.2	9.2	8.7	8.2	6.5	5.1	
7	9	10-20	11.9	9.0	8.4	8.0	6.3	5.0	
9	7	12-40	11.8	8.9	8.3	7.9	6.2	4.9	
9	12	10-20	11.5	8.6	8.1	7.7	6.1	--	
14	12	12-40	10.9	8.1	7.7	7.3	5.8	--	
9	14	10-20	9.8	7.4	7.3	6.9	5.2	--	
*	*	12-40	9.2	6.9	6.5	6.1	4.9	--	
7	12	10-20	8.9	6.7	6.3	6.0	--	--	
12	14	12-40	7.9	5.9	5.6	5.3	--	--	
7	14	10-20	7.6	5.8	5.4	5.1	--	--	
7	9	12-40	7.1	5.4	5.1	4.8	--	--	
9	12	12-40	6.9	5.2	4.9	--	--	--	
9	14	12-40	5.9	4.5	--	--	--	--	
7	12	12-40	5.4	--	--	--	--	--	
7	14	12-40	4.6	--	--	--	--	--	

\* 1 to 1 Ratio obtained by selecting identical sprockets from two units.

# ADJUSTING AND OPERATING

## DISTRIBUTION TABLES - Continued

Approximate Pounds of Soybeans per Acre - 40-inch Rows  
(Corn Planting Unit) (20-inch Press Wheel)

Drive Chain Sprockets Shaft Pinion and Ring Gear Ratio			Seed Plates					
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	3 127 A	3 301 A	3 114 A	3 231 A	1 926 A	3 302 A
14	7	10-20	--	134.0	101.0	87.7	75.5	60.9
12	7	10-20	--	114.0	87.0	75.2	64.7	52.1
14	9	10-20	--	103.0	78.5	68.0	58.5	47.2
12	9	10-20	122.2	88.4	67.3	58.4	50.1	40.5
9	7	10-20	118.0	85.3	65.0	56.4	48.5	39.0
14	7	12-40	109.5	79.2	60.3	52.3	45.0	36.3
14	12	10-20	107.0	72.4	59.0	51.0	44.0	35.5
12	7	12-40	94.5	68.2	52.0	45.0	38.8	31.3
*	*	10-20	92.0	66.4	50.6	43.8	37.8	30.4
14	9	12-40	86.0	62.1	47.4	41.0	35.3	28.5
12	14	10-20	78.5	56.6	43.1	37.4	32.2	25.9
12	9	12-40	73.5	53.0	40.4	35.0	30.1	24.2
7	9	10-20	71.6	51.7	39.4	34.2	29.4	23.7
9	7	12-40	71.0	51.1	39.0	33.8	29.0	23.4
9	12	10-20	69.1	50.0	38.1	32.9	28.4	22.9
14	12	12-40	65.8	47.5	36.2	31.3	27.0	21.8
9	14	10-20	59.0	46.2	32.5	28.1	24.2	19.5
*	*	12-40	54.8	39.6	30.2	26.1	22.3	18.1
7	12	10-20	53.1	38.4	29.2	25.3	21.8	17.5
12	14	12-40	47.2	34.1	26.0	22.5	19.4	15.6
7	14	10-20	45.5	32.9	25.1	21.7	18.7	15.1
7	9	12-40	43.0	31.1	23.7	20.5	17.7	14.2
9	12	12-40	41.3	29.8	22.8	19.7	17.0	13.7
9	14	12-40	35.4	25.6	19.5	16.9	14.5	11.7
7	12	12-40	32.0	23.2	17.6	15.3	13.2	10.6
7	14	12-40	27.8	20.1	15.3	13.3	11.4	9.2

\* 1 to 1 Ratio obtained by selecting identical sprockets from two units.

Approximate Pounds of Small Seeds or Maize per Acre - 40-inch Rows  
(Corn Planting Unit) (20-inch Press Wheel)

Drive Chain Sprockets Shaft Pinion and Ring Gear Ratio			Seed Plates							1 901 A	1 967 A
			3 559 A								
Teeth on Axle Sprocket	Teeth on Feed Shaft Sprocket	Gear Ratio	Large Varieties of Seed			Small Varieties of Seed					
			Size of Cells			Size of Cells					
			3/16"	7/32" †	1/4"	3/16"	7/32" †	1/4"			
14	7	10-20	4.7	9.4	--	6.3	9.4	--	10.9	6.5	
12	7	10-20	4.0	8.2	--	5.4	8.2	--	9.3	5.6	
14	9	10-20	3.6	7.3	--	4.9	7.3	--	8.4	5.0	
12	9	10-20	3.1	6.3	10.0	4.2	6.3	--	7.2	4.3	
9	7	10-20	3.0	6.0	9.6	4.0	6.0	--	7.0	4.2	
14	7	12-40	2.8	5.6	8.9	3.7	5.6	--	6.5	3.9	
14	12	10-20	2.7	5.5	8.7	3.7	5.5	--	6.3	3.8	
12	7	12-40	2.4	4.8	7.7	3.2	4.8	--	5.6	3.3	
*	*	10-20	2.3	4.7	7.5	3.1	4.7	--	5.4	3.3	
14	9	12-40	2.2	4.4	7.0	2.9	4.4	--	5.1	3.0	
12	14	10-20	2.0	4.0	6.4	2.7	4.0	10.1	4.6	2.8	
12	9	12-40	1.9	3.8	6.0	2.5	3.8	9.4	4.3	2.6	
7	9	10-20	1.8	3.7	5.8	2.4	3.7	9.2	4.2	2.5	
9	7	12-40	1.8	3.6	5.7	2.4	3.6	9.1	4.2	2.5	
9	12	10-20	1.8	3.5	5.6	2.4	3.5	8.9	4.1	2.4	
14	12	12-40	1.7	3.4	5.3	2.2	3.4	8.4	3.9	2.3	
9	14	10-20	1.5	3.0	4.8	2.0	3.0	7.6	3.5	2.1	
*	*	12-40	1.4	2.8	4.4	1.9	2.8	7.0	3.2	1.9	
7	12	10-20	1.4	2.7	4.3	1.8	2.7	6.8	3.1	1.9	
12	14	12-40	1.2	2.4	3.8	1.6	2.4	6.0	2.8	1.7	
7	14	10-20	1.2	2.3	3.7	1.6	2.3	5.8	2.7	1.6	
7	9	12-40	1.1	2.2	3.5	1.5	2.2	5.5	2.5	1.5	
9	12	12-40	1.0	2.1	3.4	1.4	2.1	5.3	2.4	1.5	
9	14	12-40	--	1.8	2.9	1.2	1.8	4.5	2.1	1.2	
7	12	12-40	--	1.6	2.6	1.1	1.6	4.1	1.9	1.1	
7	14	12-40	--	1.4	2.3	--	1.4	3.6	1.6	1.0	

\* 1 to 1 Ratio obtained by selecting identical sprockets from two units.

† Cells must be reamed to obtain this size.

## ADJUSTING AND OPERATING

### RANGE OF DISTRIBUTION AND PLANTING DISTANCES

The foregoing tables show approximate spacings in the row and pounds per acre which are to be used as a basis for determining plant population and the amount of seed required to plant the acreage at hand. These tables are based on 40" rows but they are subject to many variations such as wheel slippage and the grading of the seed.

Spacings in the row and the quantity of seed used may be varied as shown in the tables by the four interchangeable sprockets used on the axle shaft (see "A", Illust. 35) and on the feed shaft (see "B", Illust. 35) and by the hopper gear ratio (see Illusts. 12A and 12B).

It should be understood that as the seed plate turns faster, the planting distance decreases and the quantity of seed put down increases. Conversely a slower seed plate increases the planting distance and decreases the quantity of seed put down.

Changing the gears under the hopper from the 10-20 ratio to the 12-40 ratio will decrease the pounds per acre by forty percent. Conversely, changing from the 12-40 ratio to the 10-20 ratio increases the pounds per acre by sixty-seven percent.

When the row widths to be planted are other than 40", allow for the difference when calculating pounds per acre or plant population per acre as follows.

Row Width	Multiply by
42-inch	.95
38-inch	1.05
36-inch	1.11
34-inch	1.18
32-inch	1.25
30-inch	1.33
28-inch	1.43
26-inch	1.54

*A Careful Operator*

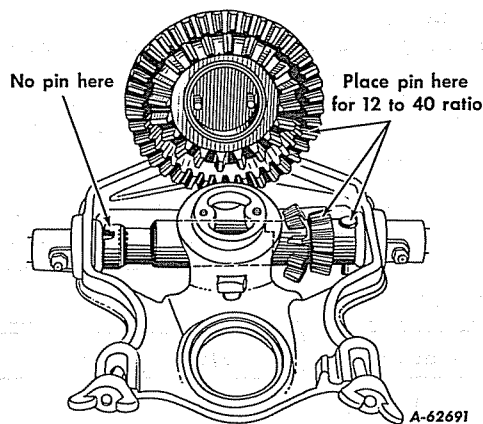
IS THE BEST INSURANCE

AGAINST AN ACCIDENT

—National Safety Council.

## ADJUSTING AND OPERATING

### HOPPER GEAR RATIO



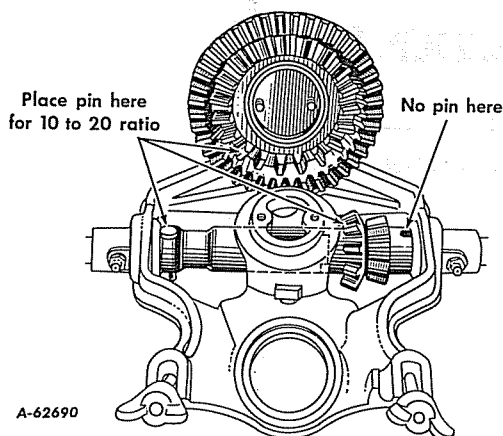
Illust. 12A

To use the outer pinion and outer gear, 12 to 40 ratio, for smaller quantities or greater drilling distances, put the pin in the 12-tooth pinion as shown in Illust. 12A.

**NOTE:** Do not use a pin in both the 12-tooth pinion and the driving sleeve for the 10-tooth pinion at the same time, as this will lock the drive and cause damage of the drive parts.

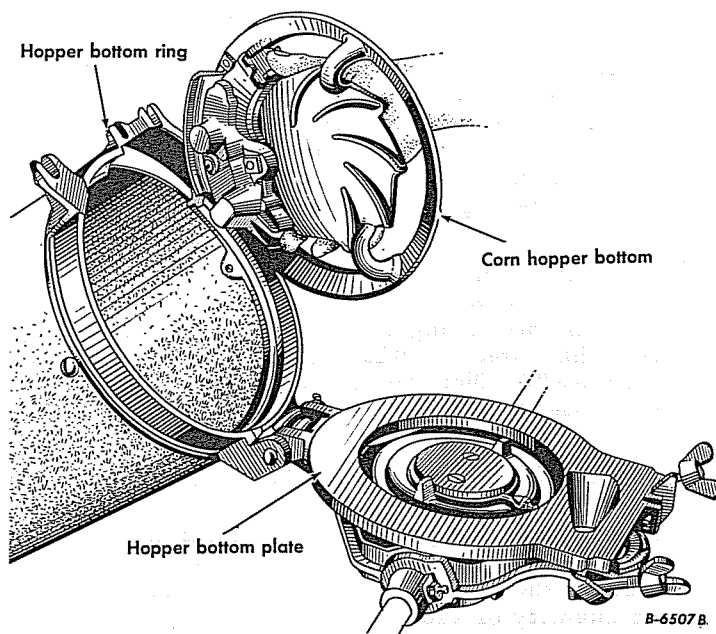
To use the inner pinion and inner gear, 10 to 20 ratio, for larger quantities or closer drilling distances, put the pin in the driving sleeve to drive the 10-tooth pinion as shown in Illust. 12B.

For further changes in the quantity and drilling distances, see charts on pages 6 to 10.



Illust. 12B

### HOPPER BOTTOMS



Illust. 12C

Changing hopper bottoms.

Three types of hopper bottoms are available in the combination hoppers.

**Cotton Bottom** for planting the various types of cotton seed.

**Peanut Bottom** for planting the various types of peanuts.

**Corn Bottom** for planting corn, beans, peas, acid delinted cotton, and a large variety of other seeds ranging from large lima beans to tomato seeds.

All three of these bottoms, cotton, peanut, or corn, are interchangeable; just loosen the thumb nuts and tilt the hopper back, unlatch and turn back the hopper bottom plate, lift out the bottom, and put in the bottom desired. See Illust. 12A.

The seed plates and filler rings are changed in a similar manner. See Illust. 15B.

These bottoms are described in detail on the following pages.



# ADJUSTING AND OPERATING

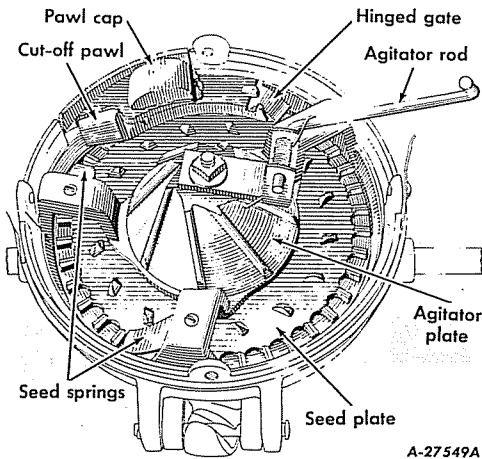
## COTTON PLANTING EQUIPMENT

### COTTON PLATES

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
621 717 R3	None	18/64"	29/64"	34/64"	38-Cell Plate for gin-run and re-ginned cotton seeds.	
621 719 R3	None	18/64"	20/64"	26/64"	42-Cell Plate for gin-run, re-ginned, acid delinted, and close machine delinted seeds.	
622 424 R1	None	18/64"	60/64" to 1-8/64"	34/64"	19-Cell Plate for gin-run and re-ginned cotton seeds.	
622 480 R1	622 481 R1	12/64"	30/64"	13.5/64"	40-Cell Plate for acid delinted seed.	
477 025 R1	None	18/64"	20/64"	22/64"	16-Cell Seed Plate for machine delinted seed.	
477 026 R1	None	18/64"	24/64"	26/64"	16-Cell Seed Plate for machine delinted seed.	
477 027 R1	None	18/64"	28/64"	34/64"	16-Cell Seed Plate for machine delinted seed.	
477 028 R1	None	18/64"	32/64"	38/64"	16-Cell Seed Plate for machine delinted seed.	

## ADJUSTING AND OPERATING

### COTTON PLANTING EQUIPMENT - Continued



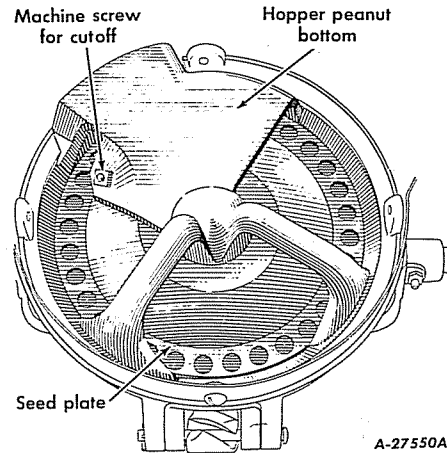
Combination hopper cut away  
to show cotton planting equipment.

This equipment has flat springs to aid in forcing the seed into the cells in the seed plate just ahead of an angling cut-off. A heavy knocker over the discharge opening is provided for urging the seed from the cells. A rod-type, spring-mounted agitator is provided to agitate the seed directly above the seed plate. The cup shaped agitator plate is designed with slanting ribs and the top of the seed plate with slanting knobs to agitate and help the seed into the cells of the seed plate to give uniform drop.

**Note:** The agitator drive in the hopper bottom should be greased daily. A lubrication fitting for this purpose will be found under the hopper bottom.

Corn planting equipment may be used when planting acid delinted cotton seed.

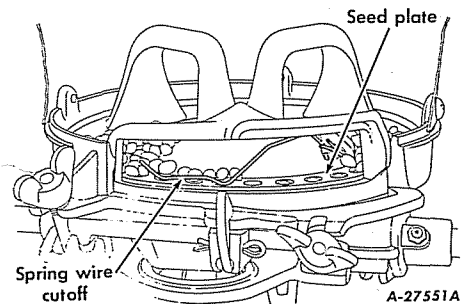
### PEANUT PLANTING EQUIPMENT



Combination hopper cut away  
to show peanut planting equipment.

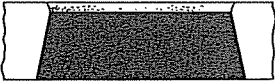
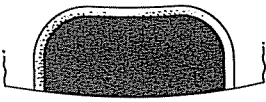

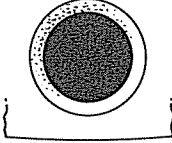
A spring wire cut-off is mounted under the housing over the discharge opening to prevent excessive seed from being discharged from the hopper. This cut-off also acts as a knocker to urge the seed from the cells.

**Note:** The spring wire cut-off must be adjusted so that it will line up with the seed cells, and when the knocker portion of the cut-off is in a cell, the tail portion of the cut-off will lay on the seed plate, without any tension on the cut-off.



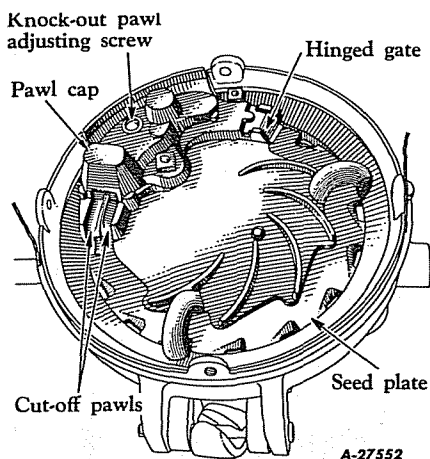
Peanut bottom cut away  
to show cut-off.

### PEANUT PLATES

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
621 731 R2	None	32/64"	1-12/64"	32/64"		
		16-Cell Plate for Spanish peanuts in the shell.				
621 732 R2	621 733 R2	16/64"	30/64" Dia.			
		32-Cell Plate for shelled peanuts.				

## ADJUSTING AND OPERATING

### CORN PLANTING EQUIPMENT



Illust. 15A  
Combination hopper cut away  
to show corn planting equipment.

For description and listing of available seed plates and filler rings, see pages 17 to 31.

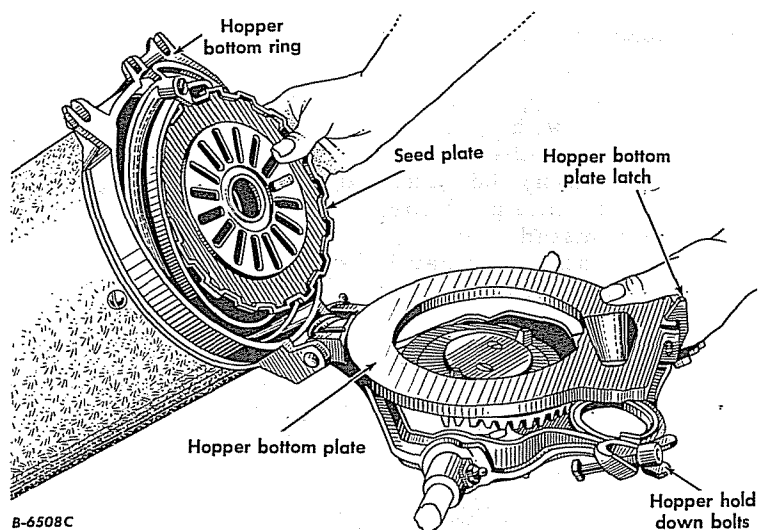
The seed plates used for a wide variety of crops are of three basic types; edge-drop, flat-drop, and whole hill-drop, and are available with assorted cell sizes and cell spacings. This feature enables the operator to plant any size and shape of hybrid seed corn, acid delinted cotton seed, and a wide variety of other seed ranging from tomato seed to large lima beans.

The double cut-off pawls make it possible to use the three types of seed plates (edge-drop, flat-drop, and hill-drop) in the same hopper. They allow only the seed in the cell to pass over the boot opening.

The knock-out pawl in the corn planting equipment can be adjusted to line up with and automatically clear each cell as it passes over the boot opening.

To adjust the knock-out pawl to work with plates having cells in the edge of the plates or with plates having cells set in from the edge, loosen the machine screw on the cut-off and knocker cap, then move the knock-out pawl to the desired position. Tighten the screw while holding the knocker in position. Rotate the seed plate to be sure the knock-out pawl works in the seed plate cells. See Illusts. 16A, 16B, 16C and 16D.

All seed plates (with filler rings, if required) on pages 20 to 34 are interchangeable in the corn planting equipment.

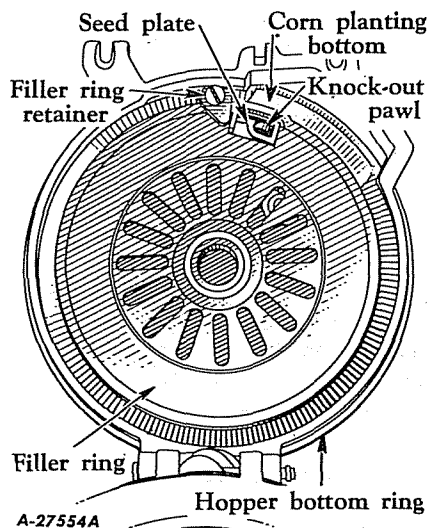


Illust. 15B  
Changing seed plates.

To change seed plates, first loosen the thumb nuts on the hopper hold-down bolts and tilt the hopper back. Then unlatch and turn back the hopper bottom plate, lift out the seed plate, and put in the desired seed plate (with filler ring, if required).

Do not unlatch the hopper bottom plate until the hopper is tipped back or the seed will spill.

The corn planting equipment has a filler ring retainer secured to the hopper bottom with a machine screw. This retainer prevents the filler ring (when used) from turning when the planter is in motion.

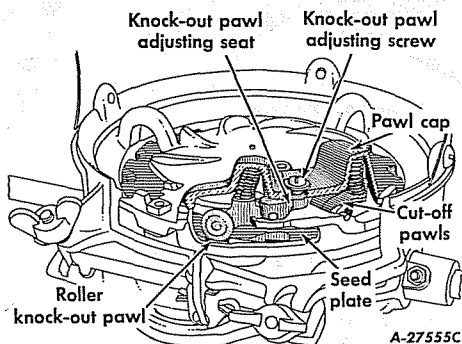


Illust. 15C  
Filler ring retainer.

## ADJUSTING AND OPERATING

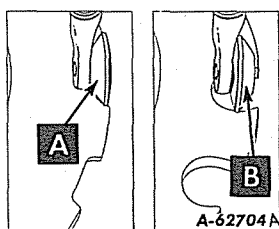
### CORN PLANTING EQUIPMENT - Continued

Four types of knock-out pawls are available for use with various types of seed plates. All but the toothed roller knocker are interchangeable, using the same cut-off and mounting within the same pawl cap. The knock-out pawl can be adjusted to line up over each seed cell and automatically clear it as the cell passes under the discharge opening.



Illust. 16A  
Cut away to show roller knock-out pawl.

Corn planting equipment is regularly equipped with roller knock-out pawls (arm 464 336 R11, roller 464 259 R1) assembled in place in the hopper bottom. They are for use with seed plates having cells open at the edge for planting corn or other large varieties of seed.

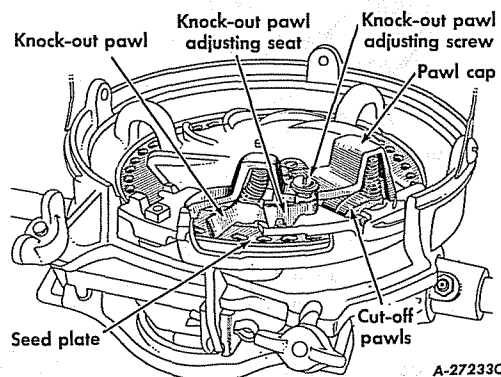


Illust. 16B

The roller knock-out pawl may be assembled on the arm with the roller rim either toward the edge or toward the center of the plate, depending upon the size or shape of the cells.

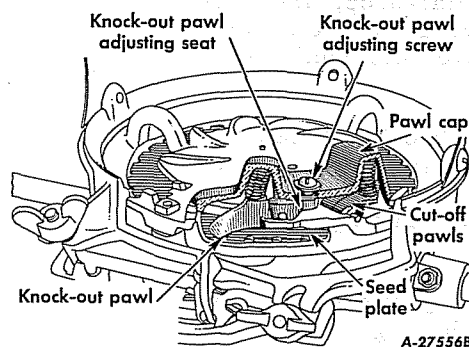
For seed plate cells open at the edge of the plate, set the roller on the arm stud so the rim of the roller is toward the edge of the plate as shown at "A", in Illust. 16B.

For seed plate cells set in from the edge of the plate, or deep cell plates, set the roller on the arm stud so the rim of the roller is toward the center of the plate as shown at "B", in Illust. 16B.



Illust. 16C  
Cut away to show 3 460 AC knock-out pawl.

Pointed knock-out pawl (3 460 AC) is included with the hopper bottom. It is used to replace the roller knock-out pawl when using seed plates having cells set in from the edge of the plate or plates to plant the smaller varieties of seeds such as maize, kaffir corn, and sorgho.



Illust. 16D  
Cut away to show 1 223 AB knock-out pawl.

Pointed knock-out pawl (small point) (1 223 AB) is available on Special Order for use with plates having small cells at the edge of the plate to plant broom corn.

## ADJUSTING AND OPERATING

### CORN PLANTING EQUIPMENT - Continued

#### Beet Seed Plates

The 82-cell plates (available for segmented, decorticated, monogerm beet, or similar seed) are listed below:

Side view



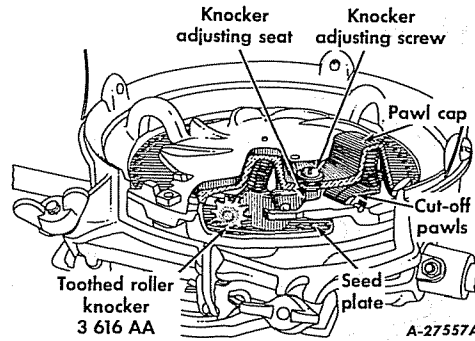
Top view



VIEW OF ACTUAL CELL SIZE from 3 639 A plate.

Seed Plate Number	Size of Cells	
	Thickness	Diameter
+ 463 426 R1	.080"	.125"
+ 469 282 R1	.085"	.140"
+ 463 427 R1	.090"	.140"
463 428 R1	.100"	.156"
# 464 874 R1	.100"	.156"
# 469 283 R1	.105"	.172"
# 463 429 R1	.110"	.164"
# 620 081 R1	.123"	.156"
# 3 639 A	.123"	.172"
# 3 615 A	.130"	.187"
# 621 972 R1	.138"	.196"
# 3 637 A	.130"	.172"
± 465 157 R1	.156"	.187"
±* 476 824 R1	.156"	.187"

- + Special Filler Ring, cp. (624 793 R11), Filler Plate (464 256 R1), special Toothed Roller Knocker (Arm 43 169 AA and Knocker 3 616 AA) and special cut-off pawls (622 278 R91) (pair of inner and outer) used with these plates.
- # Special Filler Ring, cp. (624 923 R11), special Toothed Roller Knocker (Arm 43 169 AA and Knocker 3 616 AA) and special cut-off pawls (622 278 R91) (pair of inner and outer) used with these plates.
- ± Special Filler Ring (476 825 R11), special Toothed Roller Knocker (Arm 43 169 AA and Knocker 3 616 AA) and special cut-off pawls (622 278 R91) (pair of inner and outer) used with this plate.
- \* This seed plate has cells without taper.



SEGMENTED BEET SEED PLATE assembled in hopper bottom (part of pawl cap cut away to show assembly of toothed roller knocker.

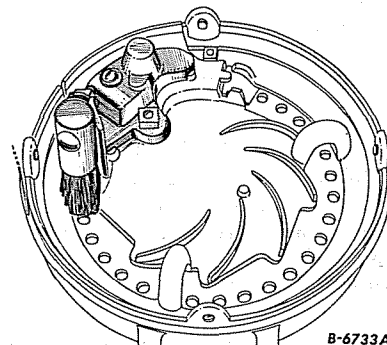
To change the knock-out pawl in the corn hopper bottom, remove the bottom from the hopper, take out the bolt holding the pawl cap and replace the knocker with the knocker desired. Make sure all the springs for both the cut-off and knocker are in their proper position. Then replace the bolt and tighten it securely.

Before placing the bottom back in the hopper, put the seed plate in the bottom. Rotate the plate to make sure that the cut-off's and knocker work freely and that the point of the knocker enters the cells of the plate. Adjust the knocker seat so the knocker will line up with the cells in the plate.

#### Brush Cut-Off

The brush cut-off for use with corn planting equipment in combination hoppers may be used for planting the more tender seeds as the brush is less liable to break the seed. It also may be used with any seed so small that it could wedge around the metal cut-offs and cause them to bind.

To substitute the brush cut-off, remove the seed can from the bracket. Be sure the knock-out pawl spring is properly seated to make the pawl operate freely and that the brush is adjusted to rest lightly on the seed plate approximately 1/32 inch below the seed plate level, before tightening the bolt.

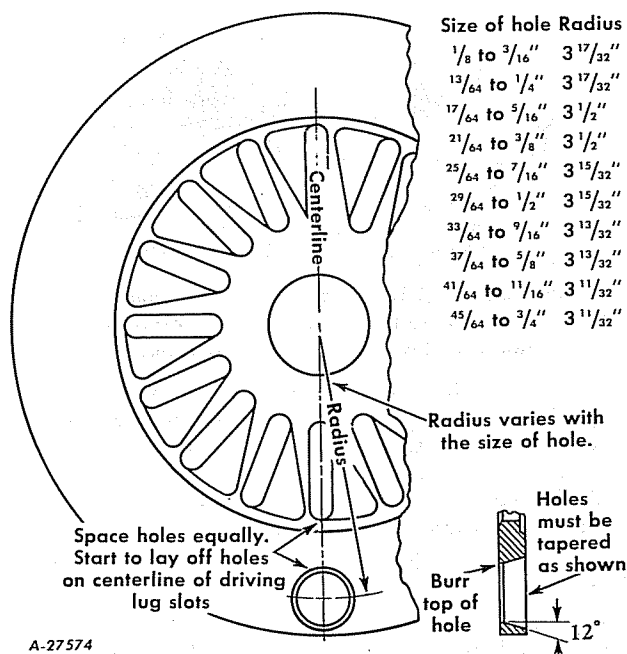


Hopper cut away to show brush cut-off substituted for the regular metal cut-off in the seed hopper.

## ADJUSTING AND OPERATING

### CORN PLANTING EQUIPMENT - Continued

#### Blank Seed Plates



A-27574

Drilling Blank Seed Plates.

Blank seed plates are available for special seeds or for special planting methods. They are like regular plates in every way except that the seed cells are not drilled. Blank plates come in six thicknesses from  $\frac{5}{64}$  to  $\frac{20}{64}$  inches.

You can order blank plates drilled to your specifications, or you can receive them undrilled and do the job yourself.

Follow the table below and chart above when drilling seed cells in blank plates.

Plate Number	Thickness	Filler Ring Required
*626 485 R1	$\frac{5}{64}$ " thick	43 288 A or 624 923 R11
+ 3 544 A	$\frac{8}{64}$ " thick	3 447 ABX
* 3 099 A	$\frac{9}{64}$ " thick	43 288 A or 624 923 R11
1 852 AA	$\frac{12}{64}$ " thick	13 879 A
621 050 R1	$\frac{16}{64}$ " thick	none
3 045 AA	$\frac{20}{64}$ " thick	none

+ Special Filler Ring (3 447 ABX -  $\frac{13}{64}$ " thick) and Pointed Kocker (3 460 AC) used with this plate.

\* Special Filler Ring (43 288A) and Pointed Kocker (3 460 AC) used with this plate when cells are over  $\frac{18}{64}$ " diameter.

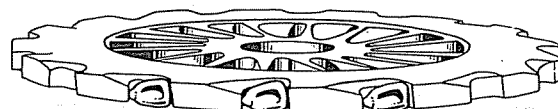
\* Special Filler Ring (624 923 R11) and Pointed Kocker (3 460 AC) used with this plate when cells are  $\frac{18}{64}$ " diameter or smaller.

\* Special Toothed Roller Kocker (Arm 43 169 AA and Kocker 3 616 AA) may be used when 82 cells,  $\frac{8}{64}$ " and up in diameter, are drilled in this plate.

#### Types of Seed Plates

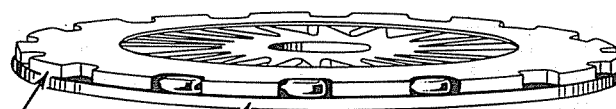
Seed plates vary widely. There are plates with 8 cells, 16 cells and others with as many as 82 cells. Some seed plates are flat-drop plates, others are edge-drop or hill-drop. Still others have cells inset from the edge, and some have cells set at any angle.

The purpose of the wide variation is to exactly match the seed plate with the seed so that greatest planting accuracy can be obtained with any crop.



A-4182A

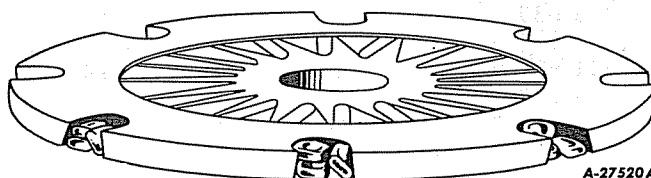
An **EDGE-DROP** plate is used to plant properly sized seed, both hybrid and open-pollinated. With this type plate, one seed stands on edge in each cell. Edge-drop plates take maximum advantage of accurate seed selections.



Flat drop plate Filler ring

A-27519A

A **FLAT-DROP** plate is best suited for flat kernels. A filler ring is required with this plate.



A-27520A

An **HILL-DROP** plate has larger cells, so that several seeds are gathered in each cell to plant an entire hill. It is well adapted for hill-drop planting of unsized corn, irregularly-shaped seed, and hybrid butt and tip kernels.

#### Seasonal Check-Up

In addition to matched seed plates, your planter must also be in good operating condition to assure accurate planting. Every year before planting time you should check the hopper bottoms, the seed plate drive train, and general planter condition.

**Worn knockers and weak springs.** These parts can seriously affect planting accuracy. Check them carefully each season before planting. If worn, they should be replaced immediately.

**Worn or sticky cut-off pawls.** The pawls must contact the plate firmly. Look for wear that might make the space between the seed plate and the cut-off pawl large enough for seeds to slip past. Be sure the pawls work freely and that the springs are in good condition.



## ADJUSTING AND OPERATING

### CORN PLANTING EQUIPMENT - Continued

#### Seasonal Check-Up - Continued

Excessive play between the seed plate and the sides of the hopper bottom. Eventually, the center bearing can become worn, allowing the seed plate to shift. It has the effect of varying the size of the cell.

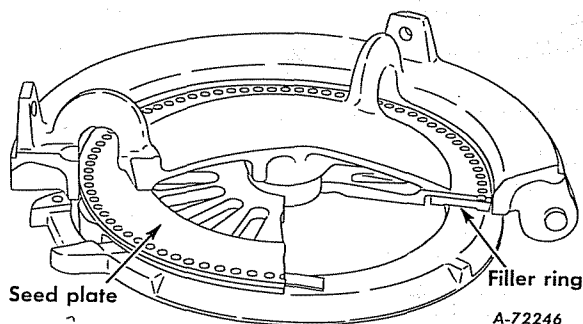
Dirt, rust, and chaff accumulations. Any of these can hamper smooth operation of the hopper parts.

Seed distributor valves. Check them closely to see that they work freely, and open and close completely.

General planter condition. Look for worn, broken, or bent parts, particularly in the drive train. Check the hopper bottom mounting brackets. Clean dirt accumulations from all moving parts.

Consider planter speed. When planting at faster speeds (4 to 5 miles per hour) the seed should fit in the plate cells with sufficient clearance to allow them to enter and leave the cells freely.

#### Matching Filler Rings to Seed Plates



A FILLER RING fills the space between a thin seed plate and the hopper bottom plate. Flat springs assure a tight fit.

Filler rings must be used with all seed plates less than 16/64 inch in thickness. Most flat-drop and hill-drop seed plates are thin and therefore require filler rings. In some instances the filler rings are grooved and serve to increase the depth of the seed plate cell. Other rings have a "lip" around the outside edge for use with smaller diameter seed plates.

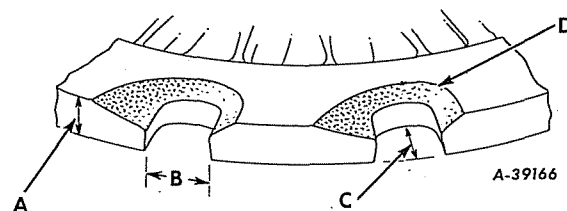
Each filler ring is adapted to only a few seed plates. Filler rings are not interchangeable among all seed plates. The specific filler ring recommended for the seed plate should always be used. Match the filler ring with the seed plate.

#### Matching Seed with Seed Plates

Seed varies in a wide range of sizes and shapes. With corn for example, the seed will be found in many different widths, thicknesses and lengths. The same type of seed corn may vary in size from one year to the next depending upon the weather condition, etc. Seed producers make every effort to have each batch of seed sized accurately and they usually recommend the seed

plate to be used for their various sized corn; however, if you select your own seed plates, the plate must be matched to each batch of seed if maximum planting accuracy is to be expected.

To assure good cell fill. Always maintain at least 2-inch depth of seed covering the seed plate. Dump the seed hopper occasionally to eliminate the accumulation of seeds larger than the cells in the seed plate at the bottom of the hopper.



PARTS OF THE SEED CELL. A. Thickness of seed plate and cell. B. Length of seed plate cell. C. Depth of seed plate cell. D. Cell relief.

To accurately plant nearly every type and size of row crop seed, over 100 different seed plates are available for McCormick-International planters. As a guide to help you select the proper plates for your seed, views of the cells in these plates are illustrated in this manual. The pages are arranged by type of plates and number of cells. Plate numbers, cell dimensions, and filler ring numbers (where required) are also given. Top and edge views of the cells are actual size and are indicated in black. The shaded areas indicate "relief" which helps funnel seed into the cell.

To select a seed plate, place the seed on the drawing in one column; then turn the seed 1/4 turn and place it over the drawing in the other column. The seed must fit within the black area on the right drawing; and between the top-and-bottom parallel lines on the drawing on the left. See the Illustration below.

This procedure allows you to select two or three approximate plates without wasting a lot of time by trial-and-error. It also overcomes the need to handle many actual plates; however, after the plates are selected, they should be tested with a sample of your seed by a seed testing device to determine the correct one for maximum planting accuracy.





















Your International Harvester dealer has a seed plate tester and he will be glad to check the plates for you. Be sure the seed plate tester is operated at a speed that corresponds to your actual planter speed.



THICKNESS OF SEED PLATE is shown with corn kernels in the seed cells. A top view is shown at the right.


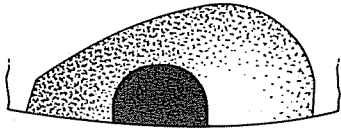

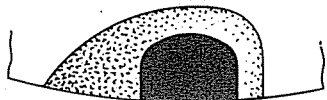



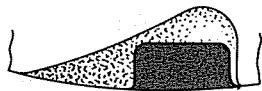

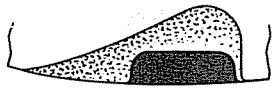

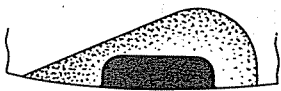
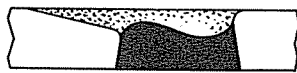


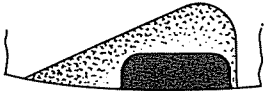




# ADJUSTING AND OPERATING

## EDGE-DROP CORN PLATES 16-CELL PLATES

Seed Plate Number	Size of Cells			View of Actual Cell Size	
	Thickness	Length	Depth	Thickness	Length and Depth
3 314 A	16/64"	28/64"	16/64"		
3 367 A	16/64"	30/64"	11/64"		
3 313 A	16/64"	30/64"	18/64"		
3 398 A	16/64"	30/64"	20/64"		
3 331 A	16/64"	30/64"	24/64"		
3 236 A	20/64"	28/64"	12/64"		
621 833 R1	20/64"	28/64"	12/64"		
3 366 A	20/64"	30/64"	14/64"		
3 324 A	20/64"	30/64"	19/64"		
1 975 AB (Grey Iron) 476 675 R1 (Delrin Plastic)	20/64"	32/64"	12/64"		


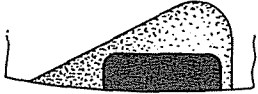

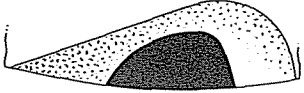

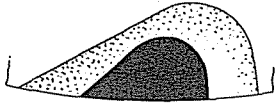

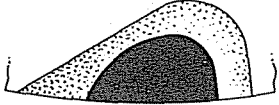

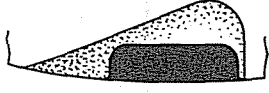

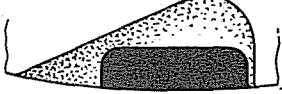
# ADJUSTING AND OPERATING

## EDGE-DROP CORN PLATES - Continued 16-Cell Plates

Seed Plate Number	Size of Cells			View of Actual Cell Size	
	Thick- ness	Length	Depth	Thickness	Length and Depth
3 561 A	20/64"	32/64"	19/64"		
3 042 A	20/64"	32/64"	22/64"		
3 546 A	20/64"	33/64"	12/64"		
3 237 AA	20/64"	33/64"	16/64"		
3 171 A	20/64"	36/64"	11/64"		
3 545 A	20/64"	36/64"	11/64"		
622 174 R1	20/64"	36/64"	12/64"		
1 977 AB (Grey Iron) 476 677 R1 (Nylon Plastic)	20/64"	38/64"	12/64"		
3 613 A	20/64"	38/64"	22/64"		
3 172 A	20/64"	40/64"	11/64"		

# ADJUSTING AND OPERATING






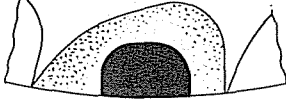














## EDGE-DROP CORN PLATES - Continued 16-Cell Plates

Seed Plate Number	Size of Cells			View of Actual Cell Size	
	Thick- ness	Length	Depth	Thickness	Length and Depth
1 978 AB (Grey Iron) 476 678 R1 (Delrin Plastic)	20/64"	40/64"	13/64"		
462 354 R1	20/64"	41/64"	18.5/64"		
Tear Drop Cells					
462 355 R1	20/64"	41/64"	21/64"		
Tear Drop Cells					
462 356 R1	20/64"	42/64"	22/64"		
Tear Drop Cells					
1 979 A	20/64"	44/64"	13/64"		
3 056 A	20/64"	50/64"	14/64"		

K

# ADJUSTING AND OPERATING












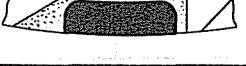




## EDGE-DROP CORN PLATES - Continued 24 - Cell Plates

Seed Plate Number	Size of Cells			View of Actual Cell Size	
	Thick-ness	Length	Depth	Thickness	Length and Depth
*480 178 R1	16/64"	28/64"	16/64"		
*480 177 R1	16/64"	30/64"	18/64"		
*480 509 R1	16/64"	30/64"	19/64"		
474 667 R1	16/64"	30/64"	20/64"		
474 666 R1	16/64"	30/64"	24/64"		
*480 510 R1	16/64"	32/64"	19/64"		
*480 511 R1	16/64"	38/64"	22/64"		
*480 692 R1	16/64"	41/64"	18.5/64"		
*480 693 R1	Tear Drop Cells				
	16/64"	41/64"	21/64"		
*480 694 R1	16/64"	42/64"	22/64"		
Tear Drop Cells					

\* - 480 179 R1 Filler ring required.

# ADJUSTING AND OPERATING

## EDGE-DROP CORN PLATES - Continued 24-Cell Plates





















Seed Plate Number	Size of Cells			View of Actual Cell Size	
	Thick- ness	Length	Depth	Thickness	Length and Depth
480 190 R1	20/64"	28/64"	12/64"		
469 809 R1	20/64"	32/64"	12/64"		
3 043 AA	20/64"	32/64"	22/64"		
480 691 R1	20/64"	33/64"	12/64"		
480 189 R1	20/64"	36/64"	12/64"		
469 810 R1	20/64"	38/64"	12/64"		
469 811 R1	20/64"	40/64"	13/64"		
474 665 R1	20/64"	44/64"	13/64"		

M












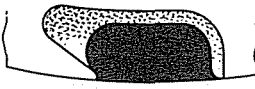

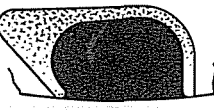





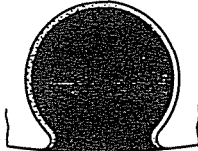


# ADJUSTING AND OPERATING

## FLAT-DROP CORN PLATES 16-Cell Plates

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick- ness	Length	Depth	Thickness	Length and Depth
3 002 A	3 000 AAX	9/64"	40/64"	14/64"		
1 853 AA	13 870 A or 622 239 R1	12/64"	24/64"	14/64"		
3 365 A	13 870 A	12/64"	26/64"	20/64"		
3 329 A	13 870 A	12/64"	28/64"	22/64"		
3 350 AA	13 870 A	12/64"	28/64"	28/64"		
3 266 A	13 870 A	12/64"	30/64"	24/64"		
1 855 A	13 870 A	12/64"	32/64"	24/64"		
3 330 AA	13 870 A	12/64"	32/64"	31/64"		
3 321 A	13 870 A or 622 239 R1	12/64"	34/64"	18/64"		
1 938 A	13 870 A	12/64"	36/64"	36/64"		

# ADJUSTING AND OPERATING












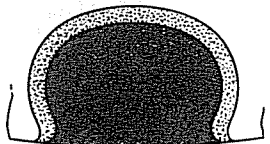

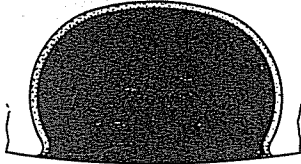
## FLAT-DROP CORN PLATES - Continued 16-Cell Plates

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick- ness	Length	Depth	Thickness	Length and Depth
1 856 A	13 870 A	12/64"	38/64"	28/64"		
1 794 A	13 870 A	12/64"	40/64"	20/64"		
1 795 A	13 870 A	12/64"	40/64"	26/64" to 24/64"		
1 928 A	13 870 A	12/64"	40/64"	40/64"		
3 050 A	13 870 A	12/64"	42/64"	20/64"		
1 796 A	13 870 A	12/64"	44/64"	28/64" to 26/64"		
1 857 A	13 870 A	12/64"	44/64"	32/64"		
3 051 A	13 870 A	12/64"	46/64"	20/64"		
1 927 A	13 870 A	12/64"	48/64"	48/64"		
3 052 A	13 870 A	12/64"	52/64"	22/64"		







# ADJUSTING AND OPERATING

## 8-CELL PLATES

NOTE: Typical seeds used with these plates are shown under the cell size.

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
1 968 A	13 870 A	12/64"	26/64"	16/64"		
		Soybeans				
1 965 A	13 870 A	12/64"	40/64"	32/64"		
		Corn (flat-drop)				
1 969 A	13 870 A	12/64"	48/64"	20/64"		
		Soybeans (2 Beans)				
1 961 A	None	20/64"	36/64"	12/64"		
		Corn (edge-drop)				
1 962 A	None	20/64"	40/64"	12/64"		
		Corn (edge-drop)				
3 215 A	None	20/64"	60/64"	42/64"		
		Lima Beans				
3 229 A	None	20/64"	1-16/64"	52/64"		
		Mexican Beans				










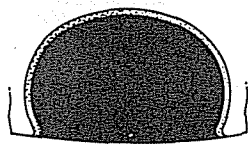
## 8-CELL PLATES (Hill Drop Type)

3 083 A	None	20/64"	30/64"	30/64"		
		Corn (2 and 3 per hill)				
3 082 A	None	20/64"	34/64"	34/64"		
		Corn (2 and 3 per hill)				
1 892 A	None	20/64"	38/64"	38/64"		
		Corn (2 and 3 per hill)				













# ADJUSTING AND OPERATING

## 12-CELL PLATES

NOTE: Typical seeds used with these plates are shown under the cell size.

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thickness	Length	Depth	Thickness	Length and Depth
3 351 AA	13 870 A	12/64"	28/64"	28/64"		
		Corn (flat-drop)				
3 352 A	None	20/64"	33/64"	16/64"		
		Corn (edge-drop)				
3 091 A	None	20/64"	40/64"	12/64"		
		Corn (edge-drop)				
3 092 A	None	20/64"	44/64"	13/64"		
		Corn (edge-drop)				
1 972 A	None	20/64"	64/64"	44/64"		
		Mexican beans				




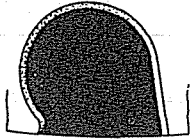

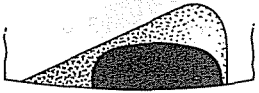

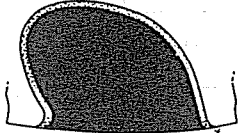



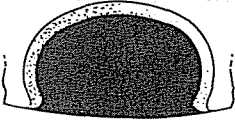
## 16-CELL PLATES

1 901 A	13 870 A	12/64"	16/64" Dia. Kaffir and Small Seed			
1 903 A	1 902 ABX	10/64"	32/64"	10/64"		
		Melon and Cucumber				
3 143 A	1 902 ABX	10/64"	40/64"	20/64"		
		Sunflower				
1 854 AA	13 870 A or 622 239 R1	12/64"	24/64"	18/64"		
		Beet and Bean				
3 214 A	13 870 A or 622 239 R1	12/64"	28/64"	18/64"		
		Black Eye Beans				
3 266 A	13 870 A	12/64"	30/64"	24/64"		
		Corn, Peas, Beans				





# ADJUSTING AND OPERATING

## 16-CELL PLATES - Continued



NOTE: Typical seeds used with these plates are shown under the cell size.

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
3 104 A	None	20/64"	33/64"	33/64"		
			Beans			
3 106 A	None	20/64"	42/64"	42/64"		
			Lima Beans			
3 058 A	None	20/64"	44/64"	16/64"		
			Kidney Beans			
3 142 A	None	20/64"	48/64"	40/64"		
			Kidney Beans			
3 059 A	None	20/64"	54/64"	18/64"		
			Kidney Beans			
1 891 A	None	20/64"	56/64"	34/64"		
			Beans			

## 20-CELL PLATES

1 967 A	13 870 A	12/64"	10/64"	Dia.		
			Sorghum			
3 355 A	None	20/64"	48/64"	24/64"		
			Peanuts			



















## 22-CELL PLATE

3 127 A	None	20/64"	54/64"	46/64"		
			Beans and Peas			







# ADJUSTING AND OPERATING

## 24-CELL PLATES

NOTE: Typical seeds used with these plates are shown under the cell size.

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
3 109 A	1 902 ABX	10/64"	16/64"	8/64"		
		Kaffir Corn				
480 191 R1	13 870 A or 622 239 R11	12/64"	24/64"	14/64"		
		Corn (flat drop)				
1 930 A	13 870 A or 622 239 R1	12/64"	34/64"	16/64"		
		Beets (whole burr)				
1 931 A	13 870 A	12/64"	38/64"	20/64"		
		Beans				
3 087 A	13 870 A	12/64"	38/64"	28/64"		
		Corn (flat-drop)				
3 043 A	None	20/64"	32/64"	22/64"		
		Nova Scotia Marrow Beans				
3 114 AA	None	20/64"	42/64"	26/64"		
		Marrow Beans Soybeans				
3 097 A	None	20/64"	48/64"	20/64"		
		Kidney Beans				
3 098 A	None	20/64"	56/64"	20/64"		
		Kidney Beans				

## 29-CELL PLATES



3 599 A	13 870 A	12/64"	40/64"	18/64"		
		Beets (whole burr)				
3 302 A	None	16/64"	40/64"	20/64"		
		Beans				
1 926 A	None	20/64"	40/64"	18/64"		
		Beans				




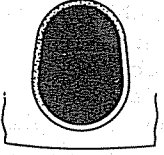
# ADJUSTING AND OPERATING

## 32-CELL PLATES



NOTE: Typical seeds used with these plates are shown under the cell size e.

Seed Plate Number	Filler Ring Required	Size of Cells			View of Actual Cell Size	
		Thick-ness	Length	Depth	Thickness	Length and Depth
1 929 A	13 870 A	12/64"	24/64"	20/64"		
				Pea Bean		







## 34-CELL PLATE

3 301 A	None	18/64"	28/64"	40/64"		
		Soybeans, Peas (2 seeds)				



## 38-CELL PLATE

3 231 A	None	20/64"	28/64"	24/64"		
		Peas Soybeans				

## 40-CELL PLATES

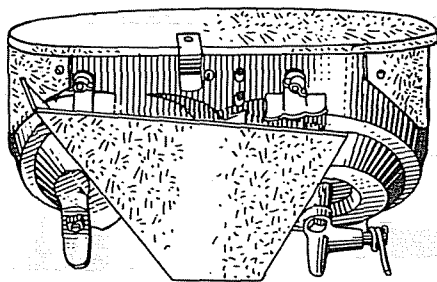
3 559 A	3 447 ABX	.131	12/64" Dia.			
				Sorghum		
622 240 R2	13 870 A or 622 239 R1	12/64"	29/64"	14/64"		
				Acid Delinted Cotton		
3 638 A	None	16/64"	44/64"	16/64"		

## 52-CELL PLATE

3 598 A	13 870 A	12/64"	17/64"	19/64"		
		Beets (whole burr)				

## ADJUSTING AND OPERATING

### TYPE "C" DUPLEX HOPPER (Special)



Illust. 32

This hopper is divided into two sections to permit planting two kinds of seed, such as corn and beans, either alternately or both at the same time. The same seed can be used in both sections to be planted twice as thick. When desired, it is possible to use only one section. Seed plates are available to plant almost any kind of seed with the exception of cotton.

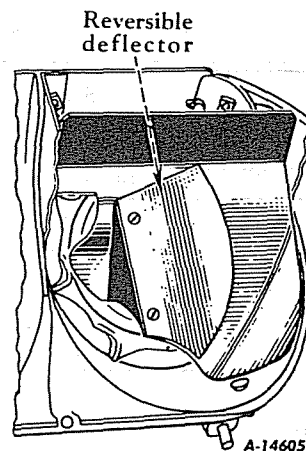
To drop seeds from both sections alternately, adjust the 16-tooth ring gear and seed plate so that a cell in one plate is over the discharge opening, and the discharge opening in the other plate is midway between two cells.

To drop seeds from both sections at the same time, adjust the 16-tooth ring gear and seed plate so the cells in both plates reach the discharge opening at the same time.

There are three driving gears furnished with this hopper, a 7-tooth, a 9-tooth, and a 12-tooth. With the use of these different gears and plates with different numbers of seed cells, seeds can be dropped almost any distance apart in the row. The driving gears each have four driving lugs which fit into holes in the face gear on the planter and are held in place by means of a  $\frac{3}{8}$ " machine bolt which screws into the face gear.

The seed deflector is reversible. For planting peanuts in the shell, the reversible deflector should be placed in the position shown in Illust. 32A. For small seeds, place the reversible deflector in the position shown in Illust. 32B.

When planting alternate rows of different seeds, close and tighten the shut-off valve at the discharge opening in the section of the hopper not planting. Also close the deflector opening in this section of the hopper with the



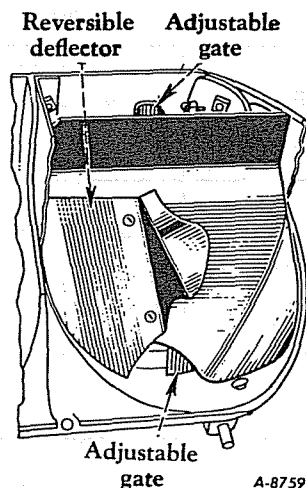
Illust. 32A

adjustable gate, thereby preventing seeds from entering the seed plate chamber and building up over the discharge opening.

The adjustable gate is also used to control the size of the deflector opening for different size seeds and for fast planting seeds, thus limiting the amount of seed entering the seed plate chamber and preventing the seeds from building up too high on the seed plate.

**NOTE:** The gate should always be wide open when the deflector is placed as shown in Illust. 32A.

When using both sides of the duplex hopper to plant seeds alternately in the row, more accurate spacing can be obtained by using the right side of the hopper for irregular shaped seeds (such as corn) and the left side of the hopper for smooth round shaped seeds (such as peas, beans, etc.)



Illust. 32B

# ADJUSTING AND OPERATING

## TYPE "C" DUPLEX HOPPER (Special) - Continued

Part Number of Seed Plate	Number of Cells	Seeds per Cell	Typical Seed	Part Number of Seed Plate	Number of Cells	Seeds per Cell	Typical Seed
R 7 016	4	5-7	Beans-Biloxi Soy	CPC 5 044	8	1	Corn (Cont'd.)-Small
CPB 5 151	8	1	Biloxi Soy	R 7 022	4	1	Small thin
CPB 5 017	24	1	Biloxi Soy	CPB 5 017	24	1	Crotalaria
CP 5 197	40	1	Bountiful	CPB 5 148	36	1	Cucumber
R 7 038	40	1	Bountiful	CP 5 197	40	4-5	Okra
R 7 039	40	1	Bountiful	R 7 000	8	1	Peanuts-Field, shelled
R 7 040	40	1	Bountiful	CP 5 195	12	1	Field, shelled
CP 5 194	12	1	Fordhook Lima	R 7 035	12	1	Field, shelled
R 7 041	16	1	Fordhook Lima	R 7 034	16	1	Field, shelled
CP 5 197	40	1	Giant Stringless	R 7 033	24	1	Field, shelled
CP 5 195	12	2	Henderson	CP 5 167	8	1	Field, in shell
			Bush Lima	CP 5 199	8	1	Jumbo, shelled
CP 5 178	4	1	Laredo Soy	CP 5 194	12	1	Jumbo, shelled
CPB 5 017	24	1	Laredo Soy	CPC 5 144	3	1	Spanish, shelled
CP 5 193	8	3-4	Mammoth Yellow	CPC 5 147	8	1	Spanish, shelled
			Soja	CPC 5 014	12	1	Spanish, shelled
CP 5 192	24	1	Mammoth Yellow	R 7 032	12	1	Spanish, shelled
			Soja	R 7 029	16	1	Spanish, shelled
CP 5 196	24	2	Mung Soy	R 7 031	24	1	Spanish, shelled
CPB 5 150	8	1	O-Too-Tan-Soy	CPB 5 013	8	1	Spanish, in shell
CPB 5 140	2	1	Velvet (small)	CP 5 175	12	1	Spanish, in shell
CPB 5 015	4	1	Velvet (small)	CP 5 198	18	4-5	Peas
CPB 5 149	4	1	Velvet (large)	CPB 5 016	24	1	Peas
CPB 5 132	4	1	Corn -Hickory King	CP 5 192	24	2	Peas-Austrian
CPA 5 166	8	1	Hickory King	CPB 5 151	8	1	California Blackeye
CPB 5 141	12	1	Kaffir, Sorghum, etc.	CP 5 198	18	3-4	Crowder
			Large	CP 5 198	18	3-4	Little Marvel
CPB 5 134	2	1	Large	CP 5 198	18	4-5	Thos. Laxton
CPB 5 132	4	1	Large	R 7 027	4	4	Pepper Seed
R 7 028	*	1	Large	CPB 5 141	12	1	Sorghum, Kaffir Corn, etc.
CPA 5 166	8	1	Large	R 7 027	4	4	Tomato Seed
CPB 5 135	2	1	Small	R 7 030	8	1	Tung Nuts
CPC 5 133	4	1	Small	CPB 5 016	24	5	Vetch - Hairy

\* 4 Sets of Twin Cells.

NOTE: Seeds of any variety vary in size and shape and above selections are based on average seed.  
Best results are obtained by selecting the plate best suited to the seed used.

## ADJUSTING AND OPERATING

### TYPE "C" DUPLEX HOPPER (Special) - Continued

Table of Planting Distances

	Using one side or both sides dropping together						Alternating, using both sides of hopper					
	Driving Gear						Driving Gear					
	Regular			Special			Regular			Special		
	12 Cog	9 Cog	7 Cog	†	10 Cog	6 Cog	12 Cog	9 Cog	7 Cog	†	10 Cog	6 Cog
2-cell plate	48"	64"	82"	32"	58"	96"	24"	32"	41"	16"	29"	48"
3-cell plate	32"	42"	55"	21"	39"	64"	16"	21"	27-1/2"	10-1/2"	19-1/2"	32"
4-cell plate	24"	32"	41"	16"	29"	48"	12"	16"	20-1/2"	8"	14-1/2"	24"
8-cell plate	12"	16"	20-1/2"	8"	14-1/2"	24"	6"	8"	10-1/4"	4"	7-1/4"	12"
12-cell plate	8"	11"	14"	5"	10"	16"	4"	5-1/2"	7"	2-1/2"	5"	8"
24-cell plate	4"	5-1/2"	7"	2-1/2"	5"	8"	2"	2-3/4"	3-1/2"	1-1/4"	2-1/2"	4"
36-cell plate	2-3/4"	3-1/2"	4-1/2"	2"	3-1/4"	5-1/2"	1-1/2"	1-3/4"	2-1/4"	1"	2"	2-3/4"
40-cell plate	2-1/2"	3"	4"	1-3/4"	2-3/4"	5"	.....	.....	.....	.....	.....	.....

#### 16 Inch Press Wheel

The above table shows planting distances which are obtained by using the 10-tooth sprocket on the axle shaft, the 7-tooth sprocket on the hopper drive shaft, and the 10-20 ratio of gears under the hopper except as noted below.

† These spacings are obtained by using the 12-cog driving gear, the 13-tooth sprocket on the axle shaft, the 7-tooth sprocket on the hopper drive shaft, and the 10-20 ratio of gears under the hopper.

#### 20 Inch Press Wheel

The above table shows planting distances which are obtained by using the 12-tooth sprocket on the axle shaft, the 7-tooth sprocket on the hopper drive shaft, and the 10-20 ratio of gears under the hopper, except as noted below.

† These spacings are obtained by using the 12-cog driving gear, the 14-tooth sprocket on the axle shaft, a 6-tooth sprocket on the hopper foot shaft and the 10-20 ratio of gears under the hopper. The 6-tooth sprocket (Part No. PO 2 782) can be obtained from Part Service. See your International Harvester dealer.

## SETTING UP

Remove all wires and arrange the parts conveniently.

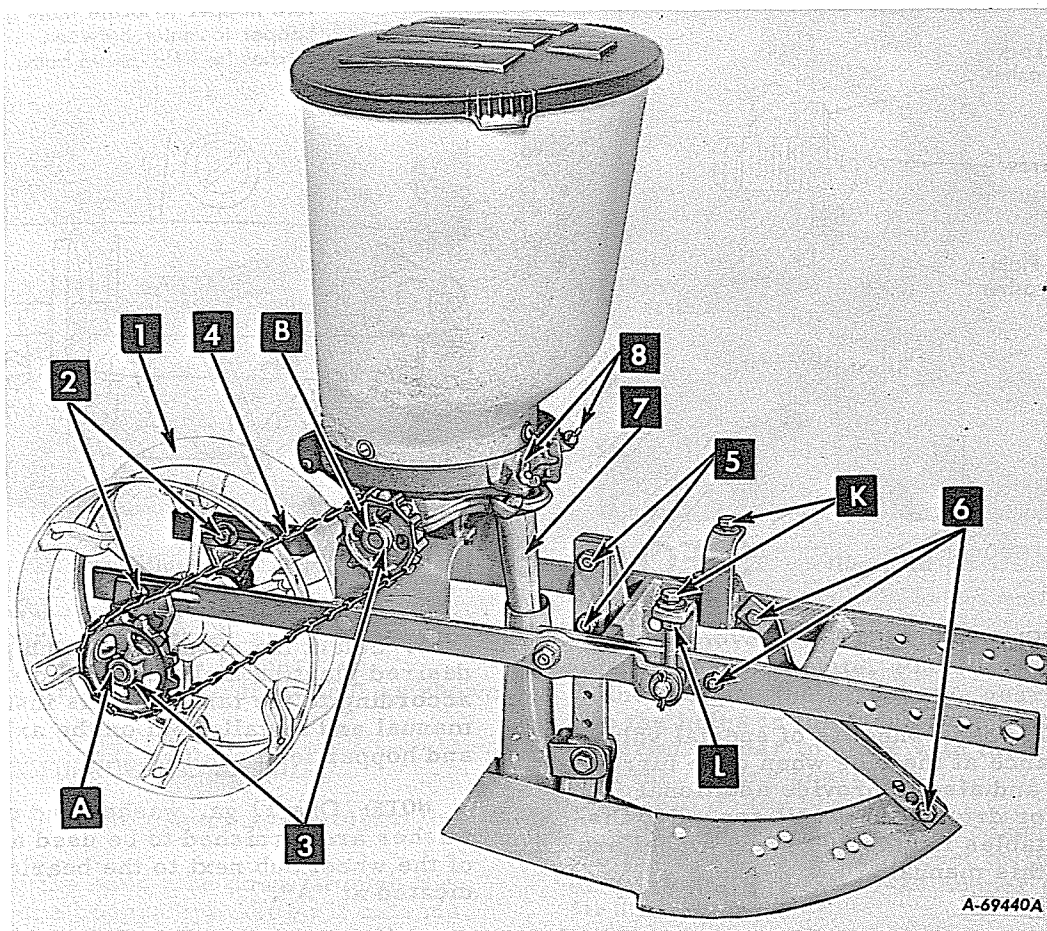
Lubricate all bearings and moving parts as you proceed, and see that they work freely.

Bolts must be used in the holes in which they are found, or in the parts to which they are attached, unless otherwise shown.

Wherever the terms "right" and "left" are used, it should be understood to mean from a position behind and facing the machine.

# SETTING UP

## ASSEMBLY



Illust. 35  
16" Press Wheel (Regular) Illustrated.

1. Slide the press wheel over the axle and secure it with the drilled pin and cotter.

2. Slide the bearings onto the axle (one over each end). Bolt the bearings (with wheel and axle in place) to the side rails. Be sure to include one of the special lock washers on each bolt under the large flat washer and next to the side rail.

3. Select the sprockets which give the desired planting distances and distribution and install them on the axle shaft and hopper feed shaft. See the tables of planting distances and distribution on pages 5 to 10.

4. Install the drive chain. Slide the axle bearings on the rails to adjust the chain tension. Be sure the wheel is set parallel with the side rails. Tighten first the bolt in the rail and bearing next to the drive chain and then tighten the other bearing bolt.

5. Bolt the runner standard to the frame.

6. Bolt the runner braces to the frame and to the runner.

7. Drop the seed tube down through the opening in the hopper bracket and then into the seed boot.

8. Install the hopper. **For Fiberglass Hopper:** Attach the hopper to the lugs on the hopper bottom ring using the screws and washers found with the bottom ring. See Illust. 36. Turn the hopper so the locating mark is centered between the catches for the hold-down bolts. See Illust. 36A.

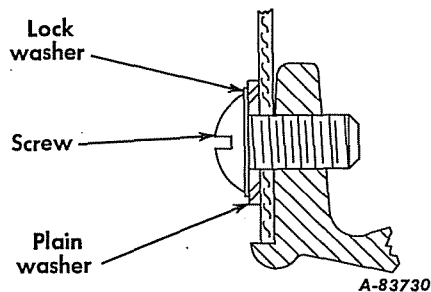
**Note:** For clearance purposes on certain planter applications, it may be necessary to turn the hopper offset 90 degrees to either side or 180 degrees to the opposite side.

**NOTE:** Turn up the nut "L", (Illust. 35) until it is about 1" below the frame bracket. This prevents excessive drop of the rear of the unit when it is raised. Do not turn the nut up tight against the bracket at any time as this will not allow the press wheel to follow the contour of the ground.

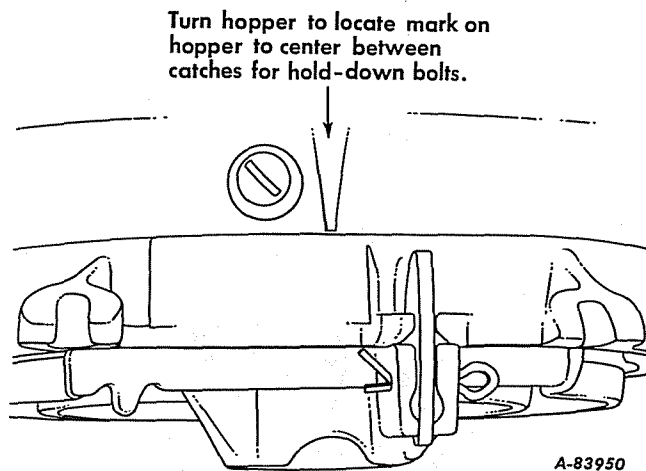
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## SETTING UP

### ASSEMBLY



Illust. 36



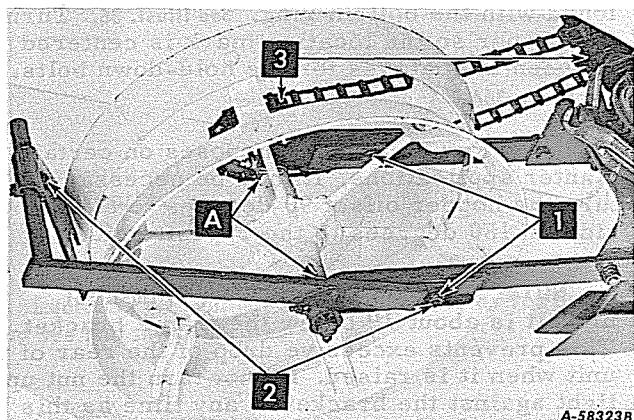
Illust. 36A

## SPECIAL EQUIPMENT

### PRESS WHEEL, 20" DIAMETER

The 20" press wheel is of special value for clearance at the side when deep furrow planting, and also to provide additional traction for driving the fertilizer unit. Distribution tables for the 20" press wheel are shown in this manual.

1. With the bearings and wheel in place on the shaft, bolt the bearings to the rails.
2. Attach the scraper (Special) (not used with semi-pneumatic tire) to the axle bearing bolt. Note that the scraper arms are supplied "right" and "left". Make sure that the arm is bolted on the side opposite the drive sprocket. Set the scraper blade to bear lightly against the wheel.



Illust. 36B

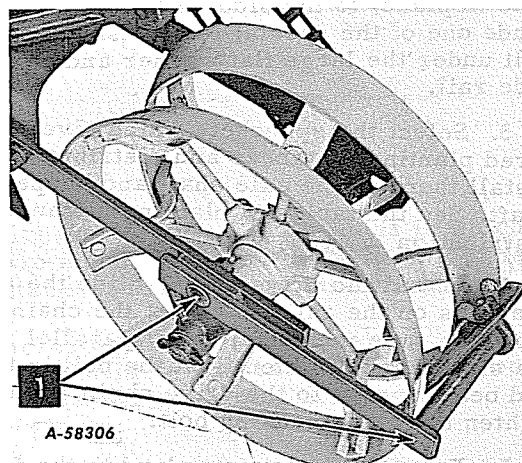
3. Select the sprockets which give the desired planting distances and distribution according to the tables in this instruction manual and install them on the axle shaft and hopper feed shaft.

**NOTE:** One 11 ga. washer and one 16 ga. washer are furnished to be used at each end of the wheel hub next to the bearings as indicated at "A".

### PRESS WHEEL SCRAPER

For Steel Tire Wheel (16" Dia.)

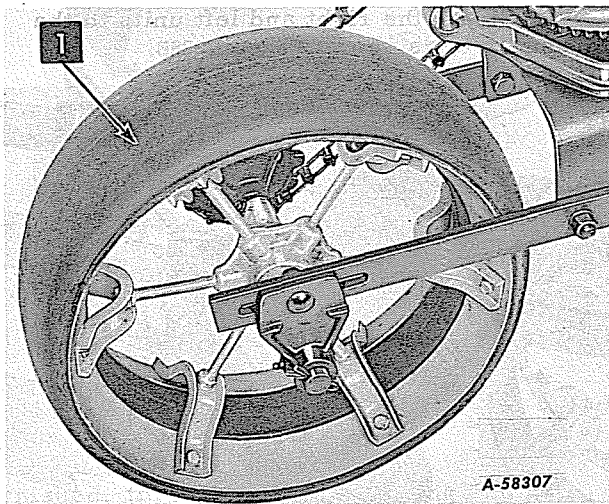
1. Attach the scraper (not used with semi-pneumatic tire) to the axle bearing bolt. Set the scraper blade to bear lightly against the wheel.



Illust. 36C

## SPECIAL EQUIPMENT

### PRESS WHEEL RUBBER TIRE



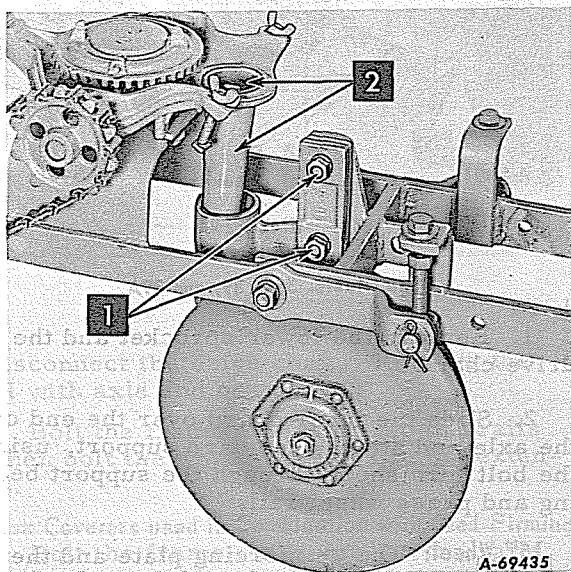
Illust. 37

Remove the wheel and the scraper arm with scraper. The scraper arm with scraper will not be used with the rubber tire.

1. Install the tire over the wheel as shown in Illust. 37.

### DOUBLE DISK FURROW OPENER UNIT

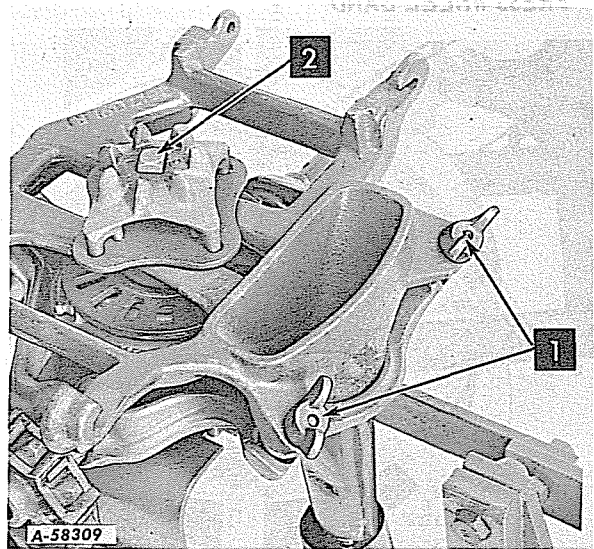
1. Bolt the disk opener assembly to the frame.
2. Drop the seed tube down through the opening in the hopper bracket so it extends into the opener boot.



Illust. 37A

### TYPE "C" DUPLEX HOPPER

1. Secure the adapting plate assembly in position with the wing nuts.



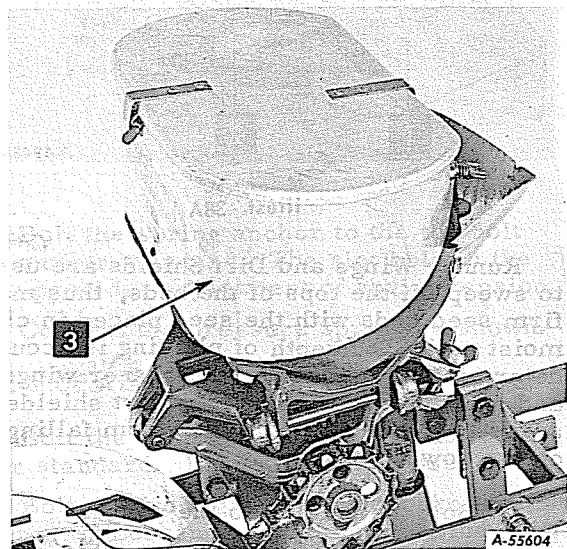
Illust. 37B

2. Remove the plug bolt from the center hole in the drive plate. Place the driving gear on the plate so the lugs on the gear fit down into the holes in the face of the plate. Secure the driving gear in place with the bolt furnished with the driving gears.

3. Put on the hopper.

4. Install the 10-tooth sprocket on the axle shaft and the 7-tooth sprocket on the hopper drive shaft. Use the 10-20 hopper gear ratio. See Illust. 12B.

**NOTE:** The driving gears with the number of cogs that will give the desired planting distances should be selected. See "Type 'C' Duplex Hopper" in the Instructions for Adjusting and Operating.

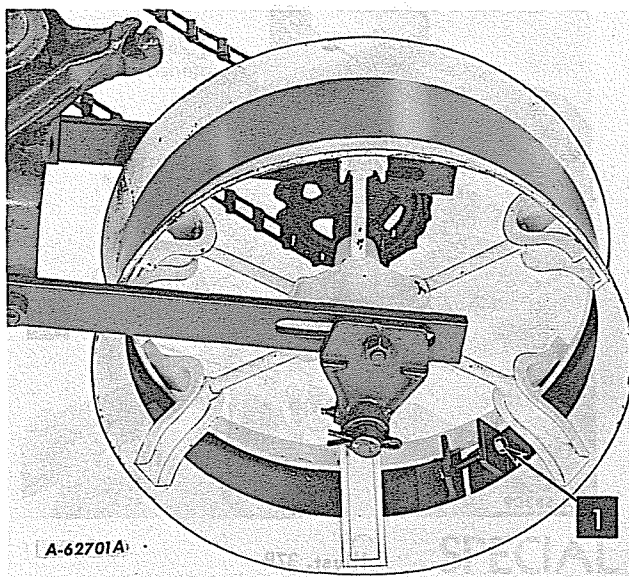


Illust. 37C



## SPECIAL EQUIPMENT

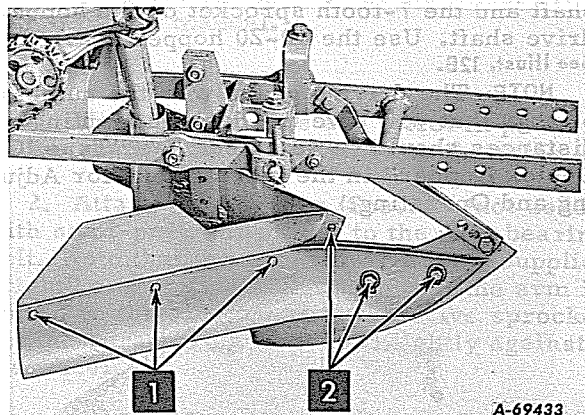
### PRESS WHEEL BAND



Illust. 38

1. Bend the band around the press wheel and draw the ends together with the bolt as shown in Illust. 38.

### RUNNER WINGS AND DIRT SHIELDS



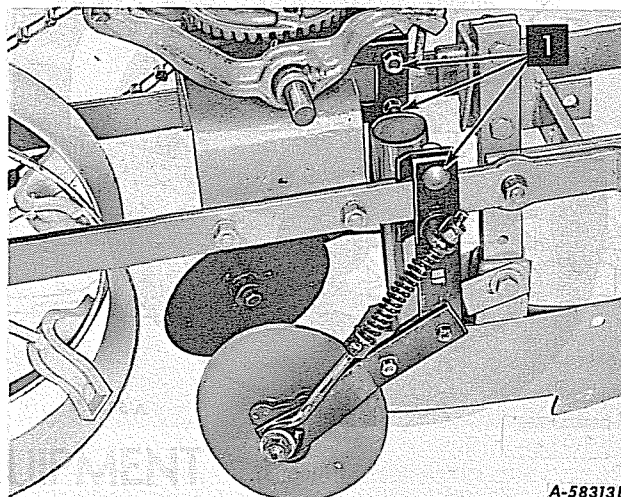
Illust. 38A

Runner Wings and Dirt Shields are used to sweep off the tops of the beds, thus making firm seed beds with the seed placed in clean, moist soil. The depth of planting is accurately determined by adjusting the runner wings up and down on the runner. The dirt shields serve to prevent excess dirt from falling back on the row.

1. Bolt the shields to the wings.
2. Bolt the shields together and bolt the wings to each side of the planter runner, using the holes which set the wings as desired.

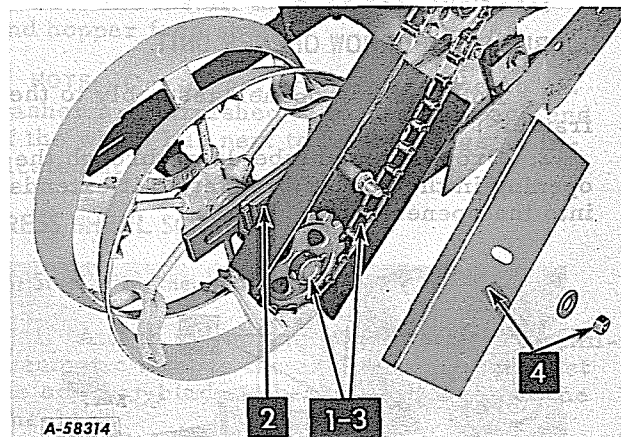
### DISK COVERING ATTACHMENT

1. Clamp the right and left units to the press rails as shown in Illust. 38B.



Illust. 38B

### CHAIN GUARD ATTACHMENT



Illust. 38C

See Illusts. 38C, 39, and 39A.

1. Remove the lower sprocket and the drive chain.
2. Slide the inner guard over the end of the axle and attach the guard support, using the bolt furnished, through the support bearing and press wheel rail.

**16" Wheel:** The reinforcing plate and the guard support found on the back side of the inner guard will assemble on the wheel bearing as shown at "A", in Illust. 39. The inner guard is removed to show these parts.

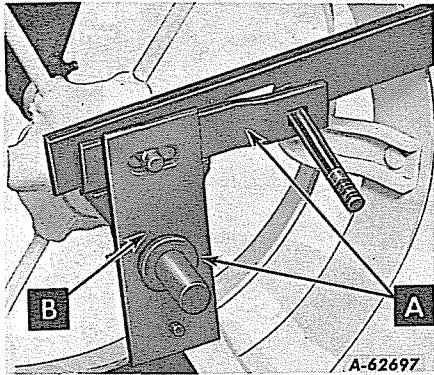
**20" Wheel:** Remove and discard the reinforcing plate "B" (Illust. 39). Insert the long bolt

Continued on next page.



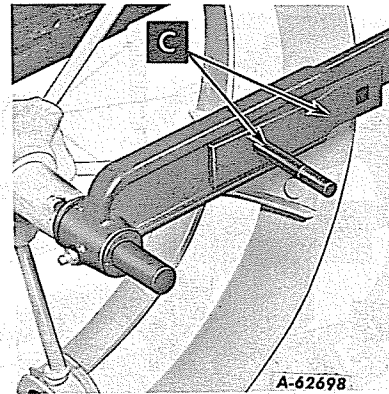
## SPECIAL EQUIPMENT

### CHAIN GUARD ATTACHMENT - Continued



Illust. 39

furnished, through the axle bearing and rail and then set the guard support over this bolt to lay in the channel along the bearing as shown at "C" in Illust. 39A. Set the large hole in the inner shield over the bearing and then secure



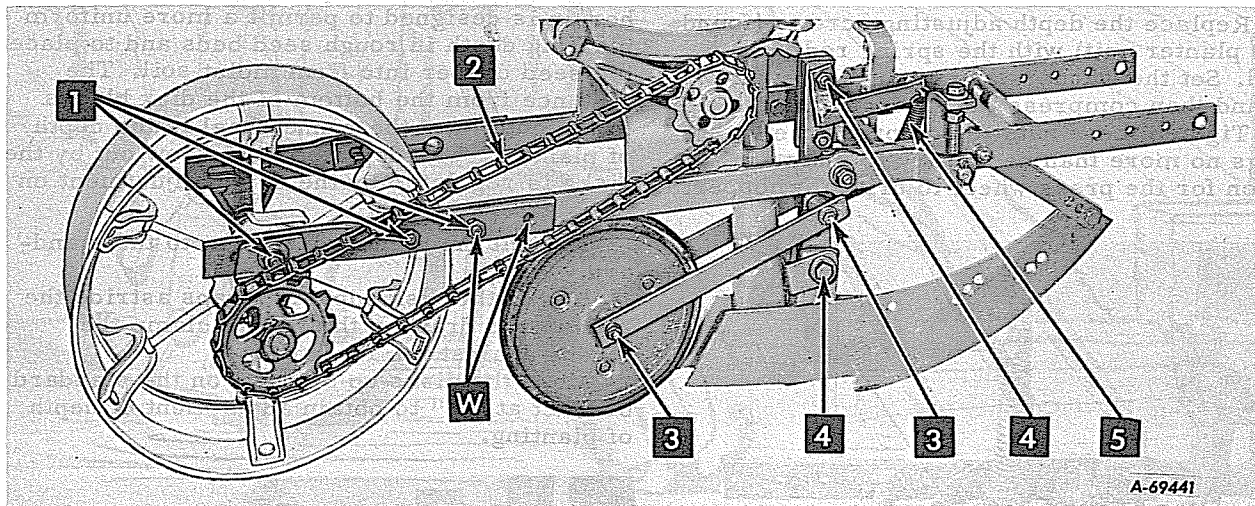
Illust. 39A

the shield, using the flat washers and spacer over the bolt.

3. Replace the lower sprocket and the drive chain.

4. Set the outer guard over the inner guard and secure it with the nut and flat washer.

### SEED FIRING WHEEL ATTACHMENT



Illust. 39B

Disconnect the drive chain. Remove the wheel with axle and bearings.

1. Bolt the frame extensions to the rails and then bolt the wheel bearings to the extensions.

Disk Coverers used in Combination with Seed Firing Wheel: Bolt the frame extensions to the rails, using the front holes "W" in the extensions.

2. Reconnect the drive chain, using the extra links provided.

3. Bolt the firming wheel yoke to the runner standard and then bolt the wheel between the yoke arms.

4. Bolt the spring anchor to the top bolt in the runner standard. The slot hole in the anchor provides adjustment of spring tension.

5. Connect the pressure spring as shown.

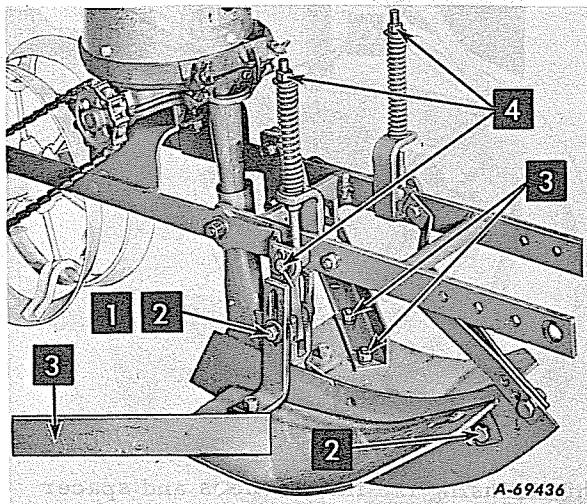
### GAUGE SHOE ATTACHMENTS

1. Bolt the rear gauge shoe braces to the runner standard. Leave the bolt loose.

2. Bolt the front gauge shoe brackets to the runner. Loosen the bolts holding the gauge shoes to the front braces, adjust the gauge shoe for depth and then tighten all bolts securely.

## SPECIAL EQUIPMENT

### GAUGE SHOE ATTACHMENTS - Continued

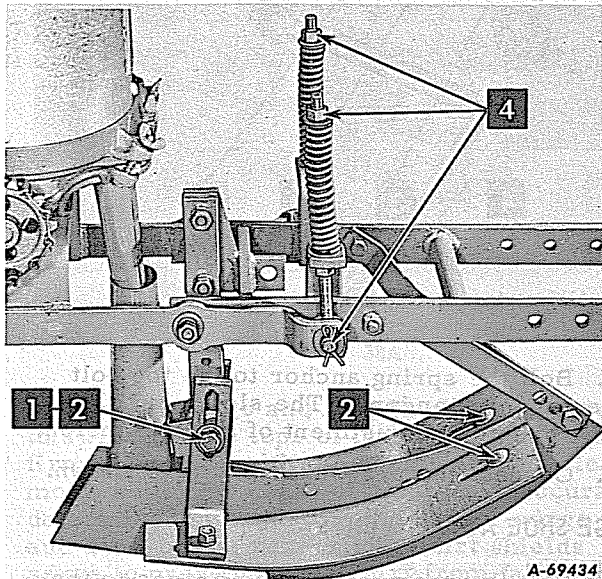


Illustr. 40

Wide Gauge Shoe Attachment (15'')

3. Wide Gauge Shoe: Bolt the clod sweeps to the gauge shoes as shown.

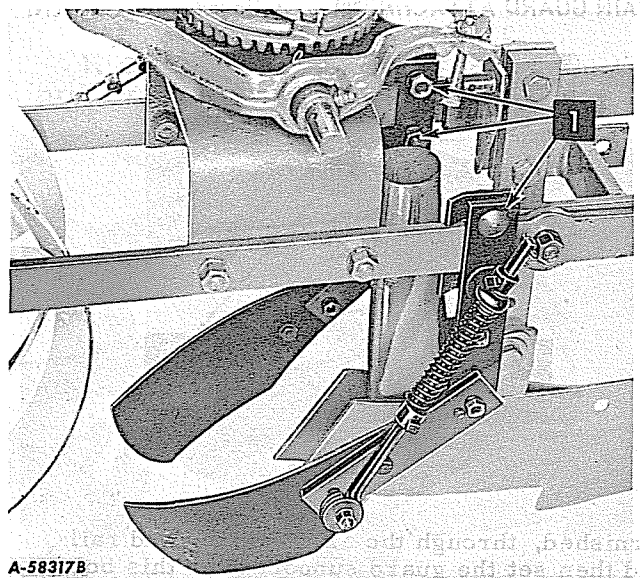
4. Replace the depth adjusting screws (found on the planter unit) with the spring rods furnished. Set the washers and springs over the rods and then compress the springs with the nuts. Tighten these nuts to compress the springs no more than necessary to maintain traction for the press wheel to drive the hopper.



Illustr. 40A

### BLADE COVERING ATTACHMENT

1. Clamp the right and left units to the press rails as shown in Illustr. 40B.



Illustr. 40B

### DISK FURROWING ATTACHMENT

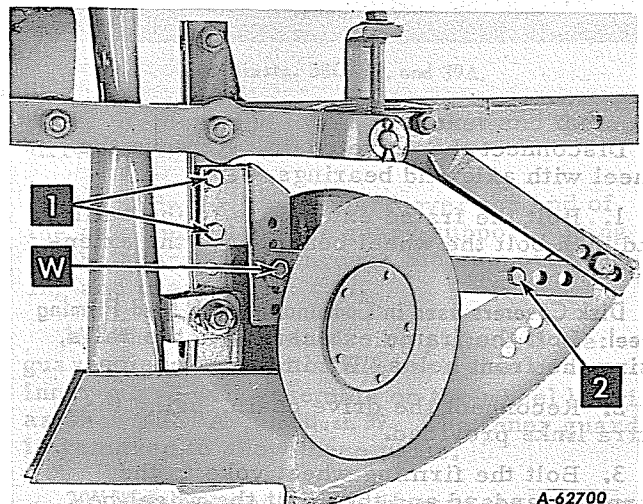
#### Disk Blades, 9" Diameter

The Disk Furrowing Attachment covered herein is designed to permit a more uniform planting depth in rough seed beds and to place the seed deeper into firm moist soil. The distance from the bottom of the disk blades to the bottom of the runner heel is the depth of planting. The depth of the furrow cut by the disks is regulated by the depth adjustment on the planter.

1. Bolt the standard bracket to the standard.

2. Set the disk support straps astride the runner and draw up the bolt to clamp the straps against the runner.

Move the disks up or down on the standard bracket at "W" to obtain adjustment of depth of planting.



Illustr. 40C



## YOU CAN think away MOST ACCIDENTS

Most farm accidents needn't happen. Case histories indicate that thoughtlessness plays a part in nearly all accidents. Too many folks act on the spur of the moment without taking time to anticipate possible results of their hasty action. The man who oils or adjusts a farm implement while it is running, for instance, is so intent on saving a few minutes that he doesn't think of the possibility of injury until it overtakes him.

Farm equipment designers and engineers insist

on safety as well as good performance in the machines they create. Their careful planning, however, can be wiped out by one careless act of an operator. In the last analysis, any power-driven equipment can be only as safe as the man who operates it.

Someone has said, "the best kind of a safety device is a careful operator." We hope you will take this definition to heart. Remember, a little forethought can forestall most accidents.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to point out more clearly the safety precautions in this manual.

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**SAFETY COUNCIL**



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*You have just purchased one of the finest pieces of equipment available today. You can look forward to years of good service because International Harvester machines are designed better and built better to last longer.*

*When you need to purchase replacement parts or have your equipment serviced, we will be here, ready to serve you.*

*We stock genuine **IH** parts—the parts that are designed for your equipment, not just made for it.*

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